STATEMENT OF PURPOSE

Computer science is a discipline in which possibilities are boundless and outcomes are instant which I find most appealing. Given its superior performance in diversified tasks, for instance, computer vision, natural language processing, medical image, and bioinformatics, the recommender system is among the most exciting topics nowadays as it has a variety of applications in the computer science world. To keep pace with the changes in the field, an exploratory attitude is a key to the continual learning process. As the enthusiasm of learning novel knowledge has always my second choice, I believe a Ph.D. from IIT Bombay University will give me the research experience which will help me to strengthen my professional goal of becoming one of the top researchers in this field of my country.

My goal is to participate in cutting-edge research in the field of recommender system and contribute to empowering machines to understand senses like human dose through advancing lifelong learning strategy without forgetting previous knowledge. Usually, the recommender system is a multidisciplinary area and widely applied technology on the internet nowadays. Over the internet, every sector implements the recommender system to provide the best experience to its users. For instance, Facebook, YouTube, Amazon, etc. every service provider applies a recommender system so that its users can find the desired personalized service with less time and effort of searching. As the recommender system provides customize information or service, accuracy is the key component for determining its efficiency. As it is a multidisciplinary field, machine learning, artificial intelligence, data mining, deep learning, and heuristics algorithm could be applied in this area. So, I plan to research it to solve one of our real-life issues.

As we are female, we usually use cosmetics in our daily life. Though it is not part and parcel for the female, it becomes a daily requirement for them especially those who are the working woman. There are a variety of cosmetics that exists, for instance, eyeliner, foundation, face powder, etc. but lipstick is the most frequently used cosmetics and females are much sensitive about the color of lipstick. On the other hand, online shopping is becoming popular day by day. Due to covid-19, the popularity of online shopping reaches its high peak. The reasons behind this popularity are that it is time-efficient as a buyer can buy anything from their home, also it is easy to access as it just needs the internet connection in buyer mobile or laptop, and a buyer can acquire a vast range of product in an online shop. But in the case of buying cosmetics through the online shop is troublesome. Usually, cosmetics depend on the buyer's skin color and a buyer cannot give a test try on online. This is why most female buyers don't buy cosmetics products from online shops. I want to share one of my experiences of online cosmetics shopping. In this pandemic, I ordered a red-colored lipstick from Darazglobal.com and after getting the delivery, when I applied the lipstick, the color turned reddish-orange in my lips and I also lost my confidence to buy cosmetic though online. This is the reason that I want to research on this topic that how to recommend the most accurate cosmetics according to buyers skin color by contrasting cosmetics color. I think a Ph.D. from IIT Bombay University will provide the highest quality of instructions possible in a dynamic environment with world-class research facilities and will show me that path so that I can get proper exposure to recommender system research which I am aspiring for developing my research career. Being said that, I considered several factors while choosing IIT Bombay University over other universities. One of the core factors is that it is one the best university for research, so I believe I will get the right guidance to enhance my research knowledge to improve research career. Furthermore, the beautiful green campus and Bangladeshi community at IIT Bombay also have a great influence on selection.

I have received my BSc degree in software engineering from the Institute of Information Technology (IIT), University of Dhaka (DU), Bangladesh in 2013. During my bachelor's study, I had employed as an intern in a software company named "Orion Informatics Ltd." for 6 months. In this period, I worked on two real-

life projects with different professionals which helped me to recognize myself as a confident person to deal with different situations for the successful project compilation within the timeline. This intern period acted as a catalyst to enrich my critical thinking and problem-solving capabilities, and vision to observe a problem in real life and virtual dimensions. Later, I have completed my MSc in the same subject as a major from the same university in 2015. In my master's study span, I had researched the improvement of recommender system performance. For this, I had investigated (i) different methods that were applied to the existing recommender system, (ii) the issues that bounded the existing methods to perform up to the mark, and (iii) proposed a trust-based approach where implicit trust is applied to improve the system's performance. The work was published in "International Conference on Analysis of Images, Social Networks and Texts" 2015.

After the compilation of my graduation, I had joined the same company "Orion Informatics Ltd." where I completed my internship as a software quality assurance engineer (July 2015 ~ November 2017). In this duration, I had worked on four live projects such as CRAWiz, WizNG, WizSentinal, and Browser-Based Editing (BBE) which helped me to enrich my problem solving and programming knowledge. As a software quality assurance engineer, my work responsibility was threefold. One was maintaining the quality of each release of software by ensuring zero tolerance bugs. Second, the investigation of the source of bug production. To accomplish these responsibilities, I had to automate the test suits through selenium. And my third responsibility was to fix the cosmetics and UI issues of the product which enhanced my knowledge about UX and thinking capability of both dev and QA end. Moreover, working with a group of people having different views and perspectives helped me to develop professionally and personally in a dynamic environment.

Later, I had joined as a faculty member of Noakhali Science and Technology University (November 2017 ~ till now). In this job, my previous work experience not only helped me to conduct courses but also enrich my capability to deeply investigate research problems. I had investigated different deep learning, machine learning, and trust-based approaches to enhance the prediction quality of the recommender system by mitigating the cold-start problem. Also, the research outputs were published in several journals and conferences.

After the compilation of my Ph.D. degree, I plan to come back to my home country to contribute my abroad and research experience to the development of my university as well as my country. As per my professional nature, I would like to share my work experience with my students and colleagues. Furthermore, I would like to contribute my research knowledge to build the personalized applications for different sectors of my country, for instance, tourist recommendation systems, medical recommendation systems, etc. However, my long-term dream is to establish a research institute where researchers will perform cutting-edge research on the recommender system incorporation with machine learning, deep learning, and their applications, and contribute to society by solving critical problems.

Signature

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