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Statement of Purpose
of Sidratul Tanzila Tasmi

Throughout my life, I always wanted to discover and innovate technologies that could help society in any way. Living in a developing country, I understood the importance of Computer Programs to make the life of human beings better. One of the biggest impacts of Computers and Artificial Intelligence is how they can detect sign languages that so many of us are unable to do, diagnose clinical diseases, and instantly recognize objects that could be unknown to us. This motivation to make the world a better place pushed me to opt for Computer Science and Engineering for my higher education.

Living in a country where women are discouraged to pursue Engineering, let alone opt for higher education, initially I constantly struggled to discover my specializing subject. But being highly ambitious, I understood that pursuing my dreams would not be easy. I constantly worked hard toward my goal and competed against the best scholars in my country. I got the highest grade(GPA 5/5) in my Secondary School, and Higher Secondary School examinations along with scholarships from Bangladesh Government. Afterward, I took part in the highly competitive admission test, and out of 4000 selected candidates, I stood 285th in the most prestigious university in the country(Islamic University of Technology), receiving a partial scholarship from OIC. Despite my academic success, initially, I struggled in programming due to having no prior experience. But with hard work, consistent practice, and support from my faculties, I overcame my lackings. One of the happiest moments of my university life remains on days when I worked hours on a programming challenge and solve them eventually.

Despite the huge workload and intense academic pressure to complete my 181.75 credits, I pushed myself constantly to learn new development skills and managed to get a very good CGPA. Being greatly enthusiastic about research regarding artificial intelligence, I took part in different research groups right from my second year and published one paper in ICCIT, which is one of the most reputed conferences in Bangladesh. I'm very much interested in how machine learning can be used in medical sectors and diagnose diseases.

During my university years, I spent a portion of it during the lockdown and the global pandemic due to COVID-19. I was greatly intrigued by how a small virus can have a huge impact on the world and decided to apply my knowledge of computer science to assist hard-working medical workers and suffering patients. I have published 2 conference papers, one diagnosing COVID-19 and other pulmonary diseases and the other regarding how COVID-19 can impact pregnant mothers. When I realized that the current world is going to an unhealthy diet and a huge number of people are suffering from chronic sleep diseases, I worked on finding datasets and applying my machine learning knowledge to diagnose the mortality of such patients if they have COVID-19. This small breakthrough got published in a reputed journal of MDPI and opened the gate for me to the research world. My thesis work is based on Computer Vision, which is one of the most growing and popular domains in computer science. I learned about

action recognition and worked on diagnosing different neurological disorders through this analysis. The combination of the medical field and Artificial Intelligence is the most intriguing domain I've worked on. Other than my academics, I actively took part in content writing for the Computer Science club at my university and participated in different business competitions regularly. I believe all of these helped me develop my interpersonal, leadership, and communication skills.

To fulfill my dreams of studying the impact of Artificial Intelligence on the medical field, I believe the research group "AI for Healthcare and Life Sciences" by the Massachusetts Institute of Technology is going to be an excellent choice. This is one of the finest departments that I have explored and the research studies greatly interest me. The recent publications from this department were very innovative and piqued my interest. I know that the Massachusetts Institute of Technology is one of the most competitive universities in the world. Yet I would like to consider myself a potential candidate because of my perseverance, enthusiasm, firm dedication, and hard-working approach. I believe working with one of the finest minds here would enable me to enhance my knowledge and build a successful career. I hope my background, motivation, qualifications, and experiences are considered suitable to enroll in the PHD program in the "AI for Healthcare and Life Sciences" department of the Massachusetts Institute of Technology.