

---

Khulna University of Engineering and Technology (KUET), one of Bangladesh's most prestigious and competitive universities, was where I started my academic career in Computer Science and Engineering (CSE). My undergraduate years were challenging but transformative. The rigorous university curriculum initially seemed daunting. Later, I saw how ideas fit together to form clear concepts. I realized success required cross-course connections and knowledge synthesis. Time deepened my appreciation for the discipline. I gradually improved, turning initial struggles into curiosity and exciting my academic career.

Starting at KUET, I sought mentorship, extracurriculars, and meaningful projects to grow. I joined KUET's Mars Rover team, Team Durbar, to work on OpenCV, computer vision, lightweight CNN models, and rover navigation. This team taught me the value of collaboration and problem-solving, helping us place 10th globally in the 2020 Indian Rover Design Challenge. As HACK's vice president, I improved my leadership, teamwork, and problem-solving.

In my third year of undergraduate, Assistant Professor Jakaria Rabbi introduced me to research, changing my academic life. Assistant Professor Jakaria Rabbi helped me write "Bangla Natural Language Processing: A Comprehensive Analysis of Classical, Machine Learning, and Deep Learning-Based Methods." My paper's tasks were Bangla information extraction, word sentiment disambiguation, sentiment analysis, and named entity recognition. Studying Bangla's linguistic diversity and data scarcity taught me how to apply machine learning to constrained environments. We compiled over 200 papers for the publication. I wrote another journal paper under Assistant Professor Jakaria Rabbi. "Recent Advances in Deep Learning Techniques for Face Recognition," IEEE. This project introduced me to transfer learning and GANs.

Dr. M.M.A Hashem supervised my thesis, "BCI-oriented EEG Signal Analysis and Classification." BCI systems benefited from EEG signal analysis. I learned and implemented a CNN architecture to extract spatial and temporal features without signal processing coursework. This project inspired me to study medical technology by demonstrating bioengineering and machine learning's medical applications. I was also privileged to work on a real-world project with OneBlood, a US blood donation center. With the guidance of Professor M.M.A. Hashem and a former student, I developed predictive models to analyze donor behavioral patterns to solve logistical problems using machine learning. Some findings were presented in the conference paper "Blood Donor Arrival Forecasting Using Regression Models and Analysis of Donor Behavioral Patterns." I presented this paper at ICCIT 2023.

After graduating from KUET, I entered academia. I teach at a reputable Bangladeshi private university. My students and I work on quality research projects to encourage curiosity and creativity. My Southeast University teaching evaluation shows my dedication.

My research journey has been exploratory. Over the past three and a half years, I have researched various topics to find my passion: machine learning, deep learning, natural language processing, and signals for medical and healthcare applications. My understanding of field challenges and opportunities has grown with each exploration. This experience enhanced my technical skills and clarified my PhD research goals.

Pursuing a PhD is a continuation of my path to significantly benefit the technological community, not only a job move for me. One turning point came when some of my published works started getting citations and attention from academics all around. Knowing that my efforts might motivate others and solve practical problems drove me with responsibility and direction. This encounter strengthened my will to work on a PhD. I wish to explore fundamental ideas, do much research that motivates others, and create work that gets noticed and valued. Being already a lecturer, my desire to be a respected computer science faculty fits well with my long-term objective of guiding and mentoring students to fulfill their aspirations. Apart from a chance to expand my knowledge, the PhD is a stepping stone toward enabling future engineers and researchers.