

Statement of Purpose

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From the very beginning of my academic and professional journey, I have been fascinated by how data can reveal patterns hidden beneath the surface of human behavior, language, and decision-making. This curiosity has driven me toward the fields of Artificial Intelligence, Deep Learning, and Natural Language Processing — and now, toward pursuing a Master's in **Data Science**. I see Data Science not merely as a technical field, but as the science of transforming information into insight, and insight into action.

I completed my **Bachelor of Science in Computer Science and Engineering** from the **International Islamic University Chittagong (IIUC)** with a CGPA of **3.51/4.00**, where my academic foundation in algorithms, statistics, and machine learning began to solidify. During my undergraduate studies, I worked as a **Research Assistant**, contributing to a **CNN-based Human Activity Recognition system**, which was later published in the EMITTER International Journal of Engineering Technology. I developed two large datasets for human activity recognition — a task that strengthened my skills in data preprocessing, feature engineering, and model evaluation.

After graduation, I joined **Alchemy Software Limited** as a **Software Engineer (R&D)**, where I transitioned my research mindset into applied innovation. I designed and implemented several **NLP-driven solutions**, including an **extractive chatbot**, **Neural Machine Translation (English–Bangla)** model, and **LLM fine-tuning** for text classification, question answering, and sentiment analysis. I also worked extensively on **data collection, cleaning, exploratory analysis, and insight generation** — tasks that are at the heart of Data Science. This professional experience taught me how to bridge the gap between academic theories and real-world data challenges, and how to optimize data-driven systems for production use.

Parallel to my professional career, I have been pursuing an **M.Sc. in Computer Science and Engineering** at IIUC, where my research focuses on **Bangla Chat Emotion Detection** using transformer-based architectures. I am developing a system that fuses multiple transformer models to classify emotions and generate dimensional scores, eventually mapping them to descriptive emotional states. This project blends **data science, machine learning, and computational linguistics**, and reflects my deep interest in human–data interaction and affective computing.

Beyond academics and work, I have also demonstrated leadership through community involvement. As the **President of Gopalpur Ideal Club** and **Program Coordinator at COBA**, I organized charity and awareness programs that required collecting, analyzing, and presenting data for impactful decisions. These experiences refined my ability to manage teams, handle responsibility, and communicate complex ideas clearly — essential traits for any researcher and data scientist.

My motivation to pursue a **Master's in Data Science** stems from a desire to formalize my applied experience with a stronger foundation in **statistical inference, big data analytics, and advanced machine learning techniques**. I am particularly interested in research areas that merge **data science with NLP**, such as **emotion recognition, language modeling, and human-centered AI**. I aspire to develop scalable and explainable AI systems that can understand emotions, context, and linguistic diversity — especially in underrepresented languages like Bangla.

In the long term, I aim to contribute as a **Data Scientist and Researcher**, applying advanced analytics to real-world problems in healthcare, education, and communication. I also hope to continue mentoring students and sharing knowledge, bridging the gap between data-driven innovation and social impact in Bangladesh and beyond.

I believe that your MSc in Data Science program offers the perfect environment to advance my research and technical expertise. The program's interdisciplinary approach, emphasis on applied projects, and collaborative research culture align seamlessly with my academic interests and career aspirations. I am confident that my background in machine learning,

NLP, and applied research will allow me to contribute effectively to your academic community while deepening my understanding of how data can shape a smarter and more empathetic world.

Sincerely,

Md Abu Bakar Siddiq Sayem