

Md Abu Bakar Siddiq Sayem

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PROFESSIONAL SUMMARY

I am a researcher skilled in Artificial Intelligence and Deep Learning. My work focuses on creating innovative solutions for real-world problems like emotion detection and machine translation. I have experience in conducting research, developing projects, and mentoring students. My strengths include teamwork, data analysis, and applying modern technologies effectively. I aim to contribute to advancements in computer science through a post-graduate degree.

EDUCATION

International Islamic University Chittagong
M.Sc. in Computer Science and Engineering (Pursuing)

Kumira, Bangladesh
Expected Dec 2025

International Islamic University Chittagong
B.Sc. in Computer Science and Engineering (CGPA: 3.51/4.00)

Kumira, Bangladesh
Dec 2019

RESEARCH INTEREST

- Natural Language Processing (NLP) and Chatbot Development
- Emotion Detection and Sentiment Analysis
- Neural Machine Translation
- Human Activity Recognition Using Deep Learning

RESEARCH AND TEACHING EXPERIENCE

International Islamic University Chittagong
Graduate Researcher

Kumira, Bangladesh
2020 - Present

- Working on a Chat Emotion Detection Dataset for Bangla, utilizing a fusion of three transformer models for emotion classification, level detection, and dimensional score generation. Focused on converting dimensional scores into descriptive labels to accurately identify emotions.
- Designed a system to detect stress levels from audio data, incorporating a comparative analysis of various model and dataset combinations for optimized performance.

https://github.com/abs-sayem/stress_level_detection

International Islamic University Chittagong
Research Assistant (RA)

Kumira, Bangladesh
Sep 2017 - Dec 2019

- Published research in the *EMITTER International Journal of Engineering Technology* in December 2019, showcasing a CNN-based system for recognizing seven basic human activities.
- Developed two datasets, HARDataset1 (57,441 images) and HARDataset2 (12,046 images), for robust analysis and evaluation.

https://www.researchgate.net/publication/357871345_HActivityNet_A_Deep_Convolutional_Neural_Network_for_Human_Activity_Recognition

Conference Paper Contribution (during SSR Tech)

Dec 2019

- Co-authored and published the paper “*Monitoring Harmful Sound Density and Light Intensity State in Industrial Workplace*” during my tenure at SSR Tech. Presented at a conference.

<https://ieeexplore.ieee.org/document/8938314?arnumber=8938314>

International Islamic University Chittagong
Teaching Assistant (TA)

Kumira, Bangladesh
Jun 2019 - Oct 2019

- Led discussions, tutorials, and lab sessions, providing support to students in coding problem-solving and project development.
- Return assignments to students in accordance with established deadlines and inform students of the procedures for submitting class work, like lab reports.
- Evaluate lab performance, assist students with solving coding problems.
- Notify instructors of errors or problems with assignments, give feedback to the course teacher about students' problems.
- Assist course teacher in developing teaching materials, and checking students' projects and discussing their project ideas.

CERTIFICATIONS AND COURSES

- **Machine Learning and Data Analysis** - NACTER Bangladesh, 2024
- **Natural Language Processing** - PyOhio (Alice Zhao), 2022
- **Neural Networks and Deep Learning** - Coursera (deeplearning.ai by Andrew Ng), 2019
- **Convolutional Neural Networks** - Coursera (deeplearning.ai by Andrew Ng), 2019
- **Introduction to Tensorflow for Artificial Intelligence, Machine Learning and Deep Learning** - Coursera (deeplearning.ai by Andrew Ng), 2019
- **Machine Learning for Everybody** - freeCodeCamp.org, 2018

JOB EXPERIENCE

Alchemy Software Limited
Software Engineer (R&D)

Chittagong, Bangladesh
Nov 2020 - Present

- Developed a specialized extractive chatbot capable of processing text files (e.g., PDF, TXT), preprocessing the content, and providing context-aware responses to user queries.
- Executed tasks such as raw data collection, data cleaning, exploratory data analysis (EDA), and extracting actionable insights from datasets.
- Designed robust web scraping solutions for collecting and parsing raw data from online sources.
- Automated the extraction of relevant information from CVs, focusing on datasets such as BdJobs CVs to enhance efficiency.
- Fine-tuned Huggingface LLM models for diverse NLP tasks, including sentiment classification, information extraction, language translation, and topic modeling.
- Developed an Encoder-Decoder architecture for Neural Machine Translation (English-Bangla), ensuring linguistic precision and fluency.
- Created optimized pipelines for specific NLP tasks, such as data cleaning, question-answering, sentiment analysis, text generation, and machine translation.
- Collect, preprocess, and annotate datasets for training and evaluating NLP models.
- Work closely with cross-functional teams to integrate NLP solutions into real-world applications and improve user experiences.

LEADERSHIP/TEAMWORK EXPERIENCE

Gopalpur Ideal Club
President

Chittagong, Bangladesh
2020 - 2023

- Organized community events, including charity drives and environmental cleanliness campaigns.
- Provided aid to underprivileged families and facilitated financial support for social causes, like - marriage expenses, medical treatments, and housing.

Charity Organization of Bangladesh (COBA)
Program Co-Ordinator

Chittagong, Bangladesh
Dec 2018 - Dec 2019

- Successfully coordinated a large-scale fundraising initiative for flood-affected families in Sylhet, ensuring efficient distribution of resources and impactful assistance to those in need.
- Promoted community engagement by organizing meetup discussions on social issues, fostering teamwork, and developing detailed plans to execute programs smoothly and effectively.

SSR Tech
Co-founder

IIUC, Bangladesh
Jul 2017 - Dec 2019

- Developed and established a **Voice Activated Home Automation System**, which was showcased at the university tech fest and selected by the committee for demonstration without a registration fee due to its outstanding quality and relevance.
- Contributed to Arduino-based IoT projects and led innovative ideas that bridged academia and practical applications.

IEEE, IIUC Student Branch
Executive

Bangladesh Section
Jan 2018 - Dec 2018

- Organized events, workshops, and technical activities to help members learn new skills and grow professionally.
- Managed tasks like preparing reports, handling finances, and planning yearly programs to keep the branch running smoothly.
- Worked with regional representatives and encouraged teamwork by holding regular meetings and discussions among members.