

MD. SHAKIL AHMED

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Career Objective

I am an ambitious, aspiring researcher with a strong academic foundation in deep learning, natural language processing, and medical image analysis, with a particular focus on computer vision. I am passionate about utilizing AI for the betterment of society, with research interests in enhancing transformer-based models for underrepresented languages and leveraging AI for healthcare solutions, such as medical image segmentation and depression detection. My ambition is to work in a research lab where I can work with knowledgeable researchers, contribute to meaningful initiatives, and create morally sound, accessible AI models that will help humanity. My dream in life is to be a good person and use my career to help people. My end goal is to be a good human and use my work to make a positive difference in people's lives.

Education

Southeast University

Bachelor of Science in Electrical and Electronics Engineering

Dhaka, Bangladesh

Jan 2021 – Feb 2025

- Achieved a CGPA of 3.60 out of 4.00

Certification

National Academy for Computer Training And Research (NACTAR)

Nov 2023 — Jul 2024

Machine Learning And Data Science

- Achieved Grade: Class A

Experience

Research institution focused on human-computer interaction.

03/2023 – 12/2023

NSUHCI-DIAL,SAC 1060, North South University

Dhaka, Bangladesh

Research Assistant

- Data Collection and Preprocessing :** Collected, cleaned, and preprocessed datasets using Python, Pandas, and NumPy for AI and ML models.
- Model Development:** Built and fine-tuned Deep Learning models with TensorFlow, Keras, and PyTorch
- Research Analysis :** Implemented cutting-edge approaches to AI techniques, conducted literature reviews, and optimized Machine Learning models using advanced methodologies.
- Experimentation:** Designed and tracked ML experiments with Weights and Biases, improved model performance through hyperparameter tuning.
- Documentation and Reporting:** Authored research papers, AI documentation, and visualized ML results using Matplotlib for presentations.

Higher education institutions

02/2024 – 9/2024

Southeast University, Department of EEE

Dhaka, Bangladesh

Undergraduate Teaching Assistant

- * **Resource Development:** Developed instructional materials, including slides and lab manuals, to enhance the learning experience.
- * **Technical Support:** Assisted professors set up lab equipment, arranging course materials, and resolving technical problems.
- * **Grading Evaluation:** Assessed assignments, quizzes, and lab reports, ensuring fair and accurate grading.
- * **Student Mentorship:** Provided one-on-one academic support to students, clarifying doubts and helping them improve their understanding of key topics.

Technical Skills

- Languages:** Python, C++, SQL
- Frameworks Libraries:** TensorFlow, NumPy, Keras, Scikit-Learn, Pandas, Matplotlib
- Domains:** Computer Vision, Natural Language Processing, Large Language Models

RESEARCH INTERESTS

- AI for Healthcare
- Large Language Model
- Autonomous Robots
- Natural Language Processing
- Human-Computer Interaction
- Autonomous Vehicles

Personal Projects

X-ray Image Segmentation with Attention in Skip Connection (Submitted) | Research Paper | Python, TensorFlow, U-Net

- * Developed an X-ray segmentation model for medical image analysis using a modified lightweight U-Net architecture with Squeeze-and-Excitation (SE) blocks.
- * Integrated attention mechanisms into skip connections to improve segmentation performance.
- * Applied custom loss functions (Dice, Jaccard) on Shenzhen, Montgomery, and JSRT datasets for optimized accuracy.

Multilingual Retrieval-Augmented Generation (RAG) System for Bengali and English Document Querying | Python, Gemini, Langchain, Faiss, | Link

- * Developed a multilingual Retrieval-Augmented Generation (RAG) system capable of understanding and responding to natural language queries in both Bengali and English using LLMs and vector-based retrieval.
- * Integrated document ingestion, semantic chunking, and multilingual sentence embeddings with FAISS/ChromaDB to enable accurate context retrieval from unstructured PDF and text files.
- * Built an end-to-end pipeline using LangChain and Gemini API, supporting query understanding, context-aware response generation, and evaluation based on relevance and groundedness.

Machine Learning Models for Wine Quality Prediction | scikit-learn, Python, Pandas, NumPy | GitHub

- * Developed and evaluated ML models to predict wine quality, including data preprocessing, feature scaling, correlation analysis, and cross-validation.
- * Optimized Random Forest models with GridSearchCV for classification and regression tasks.

ONGOING RESEARCH

Automatically Generating Summaries of Radiology/Pathology Reports Using AI | Python, Transformers, T5/BART

- * Development of an AI-powered system that transforms complex radiology and pathology reports into concise, human-readable summaries using transformer-based NLP models.
- * Designed to reduce physician workload and accelerate clinical decision-making in high-volume medical environments.

Using social media to identify depression in the Bengali community | Python, Hugging Face, Transformers

- * Created a system or Machine Learning model that leverages social media activity to predict depression levels by examining language patterns, sentiment, and behavioral cues in user posts.

Extracurricular Activities

Young Research Talent Symposium Participant

Jun 2023

North South University

- * Selected as a young researcher and participated in the DIAL HCI Research Symposium organized by the Design Inclusion Access Lab (DIAL) at North South University. The event connected emerging researchers with experts in Human-Computer Interaction (HCI) to promote innovation, inclusion, and design thinking.

Member

Sep 2023– Dec 2024

Research Society

- * Recognized as a member of the Research Society Organization, which aims to lead, promote, and deliver multidisciplinary research solutions. Membership reflects a commitment to collaborative and impactful research initiatives.

Workshop Participant – How to Write a Research Report

Oct 2021

Southeast University

- * Successfully participated in an online workshop on research report writing, organized by the Department of Electrical and Electronic Engineering (EEE) at Southeast University. The session focused on techniques for structuring and presenting academic research effectively.

LANGUAGE PROFICIENCY

IELTS: B2