

Md. Shalha Mucha Bhuyan

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Education

Chittagong University of Engineering and Technology (CUET), Bangladesh 2019 – 2024
B.Sc in Electronics and Telecommunication Engineering (ETE)
◦ CGPA 3.20/4.0

Experience

Associate Software Engineer (AI/ML) March 2025 – Present
Cloudly Infotech Limited, Dhaka, Bangladesh [🔗](#)
◦ Built and deployed LLM/ML applications by integrating FastAPI backends, containerizing with Docker, and automating ML workflows using GitHub Actions on cloud environments.
◦ Designed and implemented RAG pipelines with scalable vector databases to improve context retention and response accuracy of LLM applications.
◦ Conducted applied research in NLP, LLMs, Multimodal AI, and Computer Vision, focusing on LLM evaluation and enhancing application performance.
◦ Fine-tuned LLM models on domain-specific datasets and contributed to open-source AI platforms to advance community-driven solutions.
◦ Currently working on the **NetAgent**, an agentic orchestration system that integrates multiple AI tools, performs real-time log analysis, and enhances operational intelligence and monitoring.

Technical Skills

Programming Languages:	Python, C, C++, JavaScript, SQL
Data Analysis:	Pandas, NumPy, Matplotlib, Seaborn
Database Management:	PostgreSQL, Vector Databases
Machine Learning & AI:	TensorFlow, Keras, PyTorch, Hugging Face, Scikit-Learn, LLMs, RAG, LangChain, LangGraph, LangSmith, MCP Server
Backend & Deployment:	FastAPI, Django, Docker, Git, CI/CD (GitHub Actions), REST APIs
Web Development:	HTML, CSS, Bootstrap
Operating Systems:	Linux, Windows
Tools & Platforms:	VS Code, Jupyter Notebook, PyCharm, GitHub, GitLab

Research Publications

BVQA: Connecting Language and Vision Through Attention for Open-Ended Question Answering, (IEEE Access, Q1, IF: 3.4) May 2025
Md. Shalha Mucha Bhuyan, Eftekhair Hossain, et al.
[10.1109/ACCESS.2025.3540388](https://doi.org/10.1109/ACCESS.2025.3540388) [🔗](#)

Projects

Health Assistant Chatbot [\[GitHub\]](#) [🔗](#)
◦ Developed a medical domain chatbot using RAG to provide contextually accurate answers from user-uploaded medical documents.
◦ Built backend with FastAPI and integrated LLM with embeddings for semantic search and medical knowledge retrieval.
◦ Implemented scalable vector database (Pinecone) and deployed interactive frontend with Streamlit, improving response accuracy and user accessibility.
◦ **Tools Used:** LLM, FastAPI, RAG, Pinecone, Streamlit, Embedding

News & Research QA Assistant

[\[GitHub\]](#) [\[Link\]](#)

- Built an AI-powered web application that enables users to query long-form content (news articles, research papers, academic documents) and receive concise summaries and answers.
- Implemented RAG pipelines with LangChain and FAISS to enhance document retrieval and improve response accuracy.
- **Tools Used:** Streamlit, Langchain, FAISS, LLM, RAG

Blog Application

[\[GitHub\]](#) [\[Link\]](#)

- Implemented a production ready blog application with FastAPI, featuring secure user authentication, role-based access control, and full CRUD operations for blog posts.
- Designed backend architecture using PostgreSQL for reliable data storage and performance optimization.
- **Tools Used:** FastAPI, Python, PostgreSQL

Visual Question Answering (VQA)

[\[GitHub\]](#) [\[Link\]](#)

- Developed a VQA application using ViLT (Vision-and-Language Transformer) from Hugging Face, enabling accurate answers to image-based queries through FastAPI backend and Streamlit UI.
- **Tools Used:** FastAPI, ViLT, RestAPI, Streamlit

Certifications

- **Fundamentals of MCP**, Hugging Face
- **MCP Course Unit 3: Automation in Production**, Hugging Face
- **Generative AI with Large Language Models**, Coursera
- **Introduction to Git and GitHub**, Google
- **Natural Language Processing with Sequence Models**, Coursera
- **TensorFlow Developer Professional Certificate**, Coursera

Achievements

- **10th place in ML Competition**, CUET-ETE Day

Soft Skills

- Problem-Solving, Communication, Team Collaboration

Additional Information

Interests: System Design, MLOps, NLP, Distributed Systems, Computer Vision, Cyber Security, Football