Sakib Ahmed

Data Engineer & Full-Stack Developer, QbitLab

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Education

2018 • **SSC in Science,** The Aided High School, Sylhet **— GPA: 4.44/5**

2021 • **HSC in Science,** Blue Bird School & College, Sylhet **— GPA: 4.42/5**

Professional Experience

Jun 2023 - Present

Data Engineer & Cross platform App Developer, QBitLab, Bangladesh

- Oversaw the development of third-party applications commissioned via Fiverr, including data pipeline automation, cross-platform mobile apps (Flutter/React Native), and AI-enhanced backend systems.
- Actively managed the operations of an internal SaaS product, ensuring scalable architecture, API design, and cloud deployment on platforms like Firebase, AWS, or GCP.
- Mentored junior developers on data-centric application design, clean code practices, and ML model integration, ensuring rapid and robust delivery across agile sprints.

Jan 2022 - Feb 2023

Cross Platform App Developer & Data Engineer, Fiverr

- Mainly employed as a Data Engineer, delivering freelance projects such as ETL pipelines using Airflow, real-time data streaming systems, and data warehouse setups on AWS. Later expanded into full-stack mobile development, providing cross-platform apps for e-commerce and real-time dashboards using Flutter and Firebase.

Research Experience

May 2025

A Deep Neural Network Approach for Highly Efficient Lightning Prediction and Warning Systems
The absence of accessible and accurate early warning systems for lightning strikes poses a critical challenge, leading to severe consequences such as loss of life. Addressing this issue requires an innovative, integrated solution. My study investigates the development of a highly accurate lightning prediction model using predictive artificial intelligence, specifically Deep Neural Networks (DNNs), and essential meteorological parameters. This paper also has been published at the prestigious **8th International Conference on Engineering Research, Innovation and Education (ICERIE 2025).**

Jun 2025

Reimagining LLMs: Matrix Multiplication-free Language Model, Metropolitan University, Sylhet, Bangladesh
Constructed a Matrix Multiplication-free Language Model with ternary weights {-1, 0, 1} in order to develop a new LLM architecture that is more cost-effective, lightweight, and scalable, and can run on edge devices, IoT systems, or ultra-low-power applications while also maintaining performance comparable to that of state-of-the-art language models.

Teaching Experience

July 2024 - Dec 2024

Basics of Machine Learning with Hands-On STEM Education Experience - Course Instructor and Mentor, FTP BOOTCAMP

- Designed and evaluated theoretical and practical assignments on various basic beginner-friendly machine learning models with real-world ML projects like spam detection and house price prediction.
- Mentored sixteen pairs of students on STEM projects, providing hands-on experience with microcontrollers through DIY projects such as smart home automation, line-following robots, and weather monitoring systems.

Jan 2024 - Mar 2025

Advisor & Mentor teaching mathematical framework and it's application in Machine Learning Models, MUGAS

- Mentored university students on core mathematical concepts in machine learning, teaching linear algebra applications like linear regression ($y = mx + c$), explaining terms (m as slope, x as input), the role of chain rule in backpropagation, challenges like gradient vanishing, and mathematical techniques to overcome these issues.

Projects

Apr 2025

Autonomous Surveillance Drone (ViT + Fine-tuned LLM)

AI-powered drone that captures live video and responds to commands or events like detecting floods. It uses a vision model (ViT) to describe what it sees, and a fine-tuned language model (LLaMA 3) to decide actions and generate reports. The system runs partly on Raspberry Pi and connects to the cloud (Azure) using Flask + Ngrok for remote control and analysis.

Jun 2024 - Sep 2025

Fine tuned open source LLM

I have fine tuned tons of llm and vit model like llama 2 7b, Llama 3 7b, Granite etc for various task like code generation, task summarization, text generation, market analysis, image captioning etc. All of those model are avaialable on on my hugging face repo.

Aug 2024 - Dec 2024

AI Marketplace

A platform like an app store for AI models, where users can try my fine-tuned LLMs (like LLaMA 2, LLaMA 3, GRANITE, GPT) and models from Hugging Face. It includes a drag-and-drop playground to build custom AI pipelines—like combining text summarization, speech-to-text, and PDF reading. Users can export their workflows as standalone apps (e.g., APKs) to run on devices like Android.

Oct 2023 - Dec 2023

Sustainable Disaster Response Alert Mechanism

Developed for NASA Space Apps Challenge 2023, SDRAM is a disaster communication system that uses LoRa (432 MHz) modules to form a mesh network with up to 12 km range. The network connects to a custom Android app (built with Android Studio) to enable real-time alerts and peer-to-peer communication, even without internet. I also trained a deep neural network to predict lightning events, hosted on Azure, with API integration into the app. The system scales as more LoRa nodes join and was selected as a Global Finalist in the competition.

Aug 2023 - Sep 2023

Electronic Health Record (EHR) management system

Built a full-featured EHR system using Android Studio (Java) for managing patient data—medical history, medications, lab results, and more. Integrated OCR for extracting text from prescriptions and used Gemini for intelligent analysis. Trained a custom Vision Transformer (ViT) model for X-ray report analysis, accessible directly from the app. The system includes appointment scheduling, prescription management, and billing, offering a complete and user-friendly solution for healthcare providers.

Apr 2025

Hear Helper is an AI-powered assistive listening app

Hear Helper is an AI-powered assistive listening app for people with hearing impairments. Unlike typical transcription apps, it not only transcribes and summarizes conversations using Whisper and ChatGPT, but also detects and localizes critical environmental sounds—like alarms or crying babies—with directional and decibel data. This unique Sound Capture feature provides users with a deeper awareness of their surroundings, boosting both safety and confidence.

Jan 2023 - Mar 2023

Vitro- A VR learing platform in Unity(C#)

Vitro is like a special virtual reality (VR) world (platform) just for learning. It's a place where students and teachers can come together in VR to study and learn collaboratively. In the Vitro store, users can download tools like VR Chemistry Labs, 3D viewers, AI PDF viewers, Virtual Computers, AI voice notes, and more to help them with their studies.

Jun 2024 - July 2024

Space AR - Solar System Tour

Space Ar is an augmented reality app that helps users explore the solar system. I had used Unity using C# to develop this app. The app allows users to view planets in 3D and learn about their characteristics. It also includes a feature that lets users take pictures of the planets and share them on social media.

Courses

[Statistical Learning] Advanced Deep Learning, Deep Learning, Machine Learning, Natural Language Processing, Reinforcement Learning, Multi-Armed Bandits, Probabilistic Graphical Models, Computational Models of Cognition

[Curriculum] Computer Networks, Database Systems, Operating Systems, Data Structures and Algorithms, Object-Oriented Programming

[Mathematics] Probability-Statistics-Stochastic Processes, Discrete Mathematics, Linear Algebra, Graph Theory

Skills

Languages C, C++, C#, Java, Python, HTML, CSS, Javascript, Web Assembly Unity, ARCore, Android Studio, Stanford CoreNLP, Git,

Tools Bootstrap, jQuery, Emscripten, Blaze, j2Cl

Libraries NLTK, django, scipy, pandas, sklearn, gensim, keras, tensorflow, pytorch

Scholastic Achievements

- **Global Finalist at NASA International Space App Challenge 2023** and developed SDRAM, or Sustainable Disaster Response Alert Mechanism, had revolved around diverse fields from Computer Science and Data Science. I had trained a sequential Deep Neural Network model to predict lightning strikes based on changes in environmental parameters, along with the development of a half-duplex LoRa communication system tuned at 432 MHz as an alternative communication method during disasters — and lastly, an application (Android Studio and Java) that can access all those features. View Project Here

- **Global Nominee at NASA International Space App Challenge 2024** and built an AR app in Unity (C#) for exoplanet exploration to make learning fun for kids. The app features 3D object interaction, solar system visualization, and exploration of celestial bodies. View Project Here

- **Top 100 global finalist at IBM TechXchange Pre-Conference watsonx Hackathon 2024**. Fine-tuned open-source LLMs like Llama 3, Granite to boost productivity. I built a React Native app hosting these and third-party models, creating a Play Store-like marketplace where users can drag and drop models and tools to build pipelines. View Project

- **In the Microsoft Imagine Cup 2023**, I served as the team lead and lead technologist, securing $10,000 in funding for QbitLab. Our MVP product was Vitro, a VR learning platform (Unity/C#, AI, Azure) where students and teachers collaborate. Its store offers tools like VR Chemistry Labs, 3D viewers, AI PDF readers, virtual computers, and AI voice notes to enhance learning. View Project

Specialized/Research Topics:

- Transformer Architectures — ViT, DiT, LLMs (including matmul-free/ternary transformer variants)
- Convolutional & Hybrid Vision Models — CNN backbones integrated with Transformer heads
- 3D VAE and latent space modeling
- Diffusion Models — DiT-based diffusion pipeline for 3D.
- Multi-modal learning — image-text-shape triad.
- Cross & self-attention Transformers — used in your 3D VAE and DiT.