S. M. Sakeef Sani

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EDUCATION

- **Bangladesh University of Engineering and Technology (BUET)** — Dhaka, Bangladesh
  Bachelor of Biomedical Engineering; CGPA: 3.57 — *2020-2025*
  Courses: *Machine Learning, Artificial Intelligence, Deep Learning, Biomedical Imaging, Data Structures*

EXPERIENCE

- **British American Tobacco** — Bangladesh
  Territory Officer (Full-time) — *2025 - Present*
  - **Distribution Management**: Manage 420mn BDT annual distribution, developing new model for rural 'Char' areas using satellite imagery, geographical data, and ROI analytics.
  - **Automated Shipment App**: Built an automated shipment app for real-time route-to-market efficiency.
- **mHealth Lab, BUET** — Dhaka, Bangladesh
  Research Assistant (Part-time) — *2023-Present*
  - **Real-time Data Collector**: Developed a real-time data collector using Raspberry Pi attachments.
  - **Medical LLM**: Contributed to a medical LLM for differential diagnosis.
  - **3D Landmarks from 2D Video**: Created 3D landmarks from sparse 2D video data, boosting imaging accuracy.
- **PakhiDrone BD** — Bangladesh
  Founder and CMLO — *2024-Present*
  - **Agro-Drone Development**: Led creation of agro-drone for precision farming and pesticide spraying, adapted for rural terrain.
- **Enigmatter Studio** — Bangladesh
  Founder, Animator, and Lead VFX — *2021-2025*
  - **3D Animation and VFX**: Produced award-winning short films, merging engineering with artistic expression.

PROJECTS

- **mLabLLM - Efficient Antihallucinogenic AI for Tropical Medicine (AI, Machine Learning, Probabilistic Framework)**: Fine-tuned LLaMA 3.2 model for differential diagnosis of Dengue, Malaria, Chikungunya. Achieved 82.8% Top-3 accuracy using Bayesian reasoning, LoRA, pruning. Tech: Python, TensorFlow (2025)
- **MSLD v2.0 Dataset and Web App for Mpox Detection (Deep Learning, Computer Vision, Web Development)**: Created diverse dataset and benchmarked models like ResNet50 for mpox screening, addressing racial bias. Tech: Python, Keras, Flask (2025)
- **Monkeypox Skin Lesion Detection Feasibility Study (Deep Learning, Dataset Curation)**: Curated MSLD dataset and tested models achieving 82.96% accuracy. Tech: Python, TensorFlow (2022)
- **BUET Multi-Disease Heart Sound Dataset (Dataset Development, AI Diagnostics)**: Co-developed dataset with 864 recordings for valvular diseases. Tech: Python, Audio Processing Tools (2024)
- **FetoSynth - Fetal Heart Sound System (Biomedical Engineering, AI, Hardware)**: Real-time acoustic system for fetal monitoring in low-resource settings. Tech: Raspberry Pi, AI Models (2024)
- **DengueDrops - Smart IV Fluid Calculator (Digital Health, App Development)**: App for optimizing fluid therapy in dengue patients. Tech: Mobile Development, AI (2024)

PUBLICATIONS

- **Efficient Antihallucinogenic AI for Tropical Medicine: A Probabilistic Framework for Differential Diagnosis**: AAAI 2025. Links: https://openreview.net/forum?id=E6J9IFPE0w
- **A Web-Based Mpox Skin Lesion Detection System Using State-of-the-Art Deep Learning Models Considering Racial Diversity**: ScienceDirect 2025. Links: https://www.sciencedirect.com/science/article/pii/S1746809424008000
- **Monkeypox Skin Lesion Detection Using Deep Learning Models: A Feasibility Study**: ArXiv 2022. Links: https://arxiv.org/abs/2207.03342
- **BUET Multi-Disease Heart Sound Dataset: A Comprehensive Auscultation Dataset for Developing Computer-Aided Diagnostic Systems**: ArXiv 2024. Links: https://arxiv.org/abs/2409.00724

HONORS AND AWARDS

- 2024 Johns Hopkins Healthcare Design Competition – Global Health Track (2nd Place)
- 2024 Johns Hopkins Healthcare Design Competition – Digital Health Track (2nd Place)
- Honda Y-E-S Award 2023 Winner
- Innovation Award at International Planetary Aerial System Challenge (IPAS) 2021
- University Innovation Hub Programme (UIHP) Winner