Ohidul Alam



BIOMEDICAL ENGINEER | AI/ML | DATA ANALYTICS

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https://github.com/Nannu22-nr https://protfolio-ohidul.vercel.app/

Objective

Biomedical engineer with hands-on experience in deep learning, computer vision, generative AI, EEG/biosignal analysis and genomic data modeling, seeking an AI/ML or Data Analytics role to build intelligent, data-driven solutions that turn complex data into real-world impact.

Key Strengths

- **AI/ML & Biomedical Background:** B.Sc. in Biomedical Engineering (KUET) with hands-on work across medical AI, clinical imaging, EEG-based brain-computer interfaces, computer vision, generative AI and bioinformatics.
- **Leadership & Collaboration:** As President of KUET Research Society and a FabLab operator, I have led teams, guided students and collaborated across disciplines. Quick to learn new tools and ready to contribute to fast-paced, data-driven teams.

Experience

Visual Content Manager | Global Travel Platform

- Managed visual content operations for a global travel platform.
- Ensured content quality, consistency, and compliance with platform standards.
- Streamlined content publishing workflows by collaborating with cross-functional teams.

FabLab, KUET | Student Operator

- Operated 3D printers, laser cutters & CNC machines.
- Guided students on fabrication tools for engineering projects.

Education

Khulna University of Engineering & Technology (KUET)

B.Sc. in Biomedical Engineering
2022 – 2026

Gangni Govt. Degree College

Higher Secondary Education

Projects

Brain–Computer Interface (BCI): EEG-Based Patient Intent Prediction

- Built an AI-driven BCI that decodes EEG signals to predict what a patient is trying to communicate, applying deep learning to biosignals to bridge biological intelligence and AI and give patients who cannot speak a way to be understood.

Medical AI: Prescription OCR + Brain Tumor Detection

- Built AI models to digitize handwritten prescriptions via OCR and a deep learning pipeline to segment brain tumors from MRI scans, supporting faster, more accurate clinical decisions.

AI Content Generation & Conversational Systems

- Developed an AI chatbot with 3D avatar interaction, real-time lip-sync and live call support using LangChain/LangGraph; extended it with a diffusion-based pipeline that turns text prompts into images and short videos with live streaming.

Real-Time Object Detection & Traffic Intelligence

- Engineered YOLO-based systems for real-time detection of vehicles, pedestrians and obstacles to power adaptive traffic control; improved accuracy in complex scenes by integrating a Global Attention Mechanism (GAM) into the YOLO architecture.

Projects (continued)

Genome / RNA Structure & Function Prediction

- Applied deep learning to genomic sequences to predict structural and functional RNA properties, supporting biological research.

Big Data Analysis & Automated Report Generation

- Designed a pipeline to process and analyze large datasets and automatically generate structured, decision-ready reports, reducing manual effort and turning raw data into clear insights.

Real-Time Virtual Clothing Try-On

- Built a real-time virtual try-on system using pose estimation and garment alignment to deliver instant digital outfit previews.

Smartphone Crop Disease Detection & Instant Reporting

- Built a smartphone-based tool for farmers that detects crop diseases from a photo during cultivation and instantly generates a diagnosis report, enabling early action and healthier yields.

Real-Time Voice Cloning

- Developed a real-time voice cloning system that reproduces a speaker's voice from short audio samples, applying deep learning for speech synthesis.

Complex Terrain Path Planning (RRT)

- Designed a dynamic RRT-based path-planning algorithm for autonomous navigation in obstacle-rich environments, achieving real-time avoidance, optimized path efficiency and robust adaptability to changing terrain.

Line Follow Robotics

- Designed and built an autonomous robot that follows predefined tracks using sensor feedback and control algorithms, maintaining smooth and accurate navigation across variable track conditions.

Skills & Abilities

Programming: Python, JavaScript, MATLAB, C, R

Machine Learning & Deep Learning: PyTorch, TensorFlow, Scikit-learn, Vision Transformer (ViT), YOLO, AlexNet, EfficientNet, ONNX, TensorFlow Lite, LangChain, LangGraph, LangSmith, FastAPI

Computer Vision: OpenCV, Image Processing, Object Detection

Data & Analytics: Big Data Analysis, Automated Report Generation, Speech/Voice Synthesis

Software & Tools: Google Colab, Kaggle Notebooks, Streamlit, Flask, ROS, PowerPoint

Domain Knowledge: Biomedical engineering, medical imaging & clinical AI, EEG/biosignal processing, bioinformatics, healthcare technology

Certifications

- Deep Learning Certification Great Learning
- 100% Attendance Certificate Awarded by KUET for full attendance in 2 semester
- Hands-on Training using Fabrication Tools FabLab KUET

Extra-Curricular Activities

Autonomous Lead Team Durbar (KUET Mars Rover)

President KUET Research Society (KRS)

Vice President TRY KUET

References

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