

Md Mofazzal Hosen

Academic curriculum vitae · Dhaka, Bangladesh

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Education

Mar 2022 - Jul 2026

B.Sc. in Computer Science & Engineering

Khulna University of Engineering & Technology (KUET)

Khulna, Bangladesh

Thesis: MSA-YOLO, tiny-human detection in aerial search-and-rescue imagery. Supervisor: Prof. Dr. Sk. Md. Masudul Ahsan.

Research interests

Medical image analysis, Small-object detection, Model calibration, Reproducible evaluation

Research & manuscripts

Exercise Heart Rate Estimation Using Range-Covering Deep Learning on Wrist Photoplethysmography Signals

Md Mofazzal Hosen, Meheru Zannat

Submitted to ICCIT 2026 · Submitted · under review

Range-Covering Deep Learning addresses scarce high-heart-rate training coverage by adapting a 76K-parameter wrist-PPG estimator with distribution and spectral targets. Adding 59 minutes of treadmill recordings reduced held-out MAE from 18.0 to 11.9 bpm and reduced error by 19%-40% across five external datasets, while held-out PPG-DaLiA subject error did not change detectably.

Lightweight Tiny-Aware Multi-Scale Attention for Aerial Human Detection in Search-and-Rescue Imagery

Md Mofazzal Hosen, S. M. M. Ahsan

Submitted to ICCIT 2026 · Submitted · under review

CBAM attention, a stride-4 P2 branch, and tiny-aware training assignment for YOLO11m. Official C2A AP50 increased from 0.8432 to 0.8533. Across three seeds, scene-disjoint recall for sub-8-pixel targets improved by 1.62 ± 0.49 percentage points, with lower recall for larger targets.

Two-View Skin-Lesion Classification with Multi-Expert Aggregation

Md Mofazzal Hosen, Team perseverance (KUET)

ISIC MILK10k 2025 challenge · KUET research collaboration · Ongoing research · live leaderboard result, not a final award

For paired clinical and dermoscopic images, team perseverance combines ConvNeXt-B representations, SADE multi-expert aggregation, and a rate-transferred decision layer. On October 20, 2026, the live leaderboard showed rank 13, mean Dice 0.569, and macro AUC 0.881. Ongoing work tests image fusion and class imbalance with lesion-level cross-validation, class-wise metrics, and bootstrap comparisons.

Experience

Sep 2026 - Present Research	Research Member, Skin-Lesion Classification KUET, Department of Computer Science & Engineering · Khulna, Bangladesh Supervisor: Kazi Saeed Alam Jointly developing two-view ConvNeXt-B models with multi-expert aggregation for paired clinical and dermoscopic images. • Co-developed ViT-GPT2 and BLIP baselines in an earlier vision-language pipeline. • Shared work includes lesion-level splitting, class-wise evaluation, calibration, and risk-coverage analysis.
Apr 2026 - Present Industry	Junior Software Engineer MAEKNIT Inc. · New York, USA · Remote Building Python-based Odoo ERP modules on PostgreSQL for live business-operations workflows. • Extend production ERP workflows with maintainable Odoo modules and server-side business rules. • Implemented LLM tool calling and task execution through a dictionary-based registry that maps controlled tool requests to application functions.
Sep 2025 - Apr 2026 Industry	Full-Stack Software Developer (part-time) AlgoSoft Technologies Limited · Bangladesh · Remote Shipped a multi-module enterprise ERP/DMS spanning export/import compliance, reporting, support, and device tracking. • Shipped 37 Next.js/React routes across 8 modules and integrated more than 50 REST endpoints with caching and error boundaries. • Built an OpenAI-assisted review tool with confidence flagging that reduced manual report drafting by approximately 70%. • Delivered a production RAG chatbot across 8 knowledge categories and Python pipelines for PDF/web data extraction.
Apr 2025 - Aug 2025 Industry	Software Developer (Intern) AlgoSoft Technologies Limited · Bangladesh · Remote Contributed to the ERP/DMS platform before continuing in a part-time full-stack development role.

Honors

KUET Technical Scholarship

Khulna University of Engineering & Technology · 2020-21, 2021-22, 2022-23, 2023-24

Merit scholarship awarded to the top 50% of the class in four academic sessions.

Teaching & service

Sep 2025 - Jul 2026	Technical Lead K-MINDS, Machine Intelligence & Data Science Community Organized classes and weekly workshops, taught computer vision, managed the website team, and coordinated work across teams.
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Mar 2024 - Jul 2026

General Secretary

HACK, Hardware Acceleration Club, KUET

Organized regular classes and weekly workshops for the Hardware Acceleration Club.

Dec 2024 - Jan 2025

Organizing Committee

BITFEST 2025, KUET CSE National Fest

Sponsorships, social media, outreach and administration. Helped run the hackathon and LFR event and contributed to hackathon problem setting.

Technical skills

Languages

TypeScript JavaScript Python Java C++ C PHP
SQL Bash

Data & systems

PostgreSQL MongoDB MySQL Redis RabbitMQ
Docker GitHub Actions

Research evaluation

Lesion-level cross-validation AP / AP50 AUC / Dice
Multi-seed evaluation Ablations Paired bootstrap

Product engineering

React Next.js FastAPI Spring Boot Odoo Laravel
REST APIs

Applied AI

PyTorch OpenCV timm YOLO ConvNeXt LoRA
ONNX Whisper RAG LLM tool calling