

Sheikh Rahat Mahmud

✉ sheikhrahatm@gmail.com — 📞 +8801704595394 — 🗨 WhatsApp — 🌐 Rahat463 — 🌐 sheikh-rahatahmad — 🌐 Portfolio — 📊 Kaggle

Education

Bangladesh University of Engineering & Technology (BUET), Dhaka **Expected Jun 2026**
Bachelor of Science in Computer Science and Engineering **Final Year (L-4 T-2)**
CGPA: **3.11 / 4.00** (Last Term(L-4T-1) GPA: **3.32 / 4.00**)

Higher Secondary Certificate (HSC) **2020** — **GPA: 5.00 / 5.00**

Secondary School Certificate (SSC) **2018** — **GPA: 5.00 / 5.00**

Relevant Coursework:

- **Core Systems:** Computer Networks, Info. System Design, Software Engineering, Microcontrollers & Embedded Systems, Computer Architecture, Operating Systems, Machine Learning, Bioinformatics.
- **Mathematical & Analytics:** Statistics, Discrete Math, Calculus, Linear Algebra, Economics.
- **Industrial & Business:** IPE (Industrial & Production Engineering) course, Accounting & Finance, Electronics, Electrical Machines, English course.

Technical Skills

- **Languages:** Python, JavaScript/TypeScript, Java, C++, SQL
- **Frontend:** React.js, React Native, Material UI, HTML/CSS
- **Backend:** FastAPI, Express.js, REST APIs
- **Databases:** PostgreSQL, Oracle
- **DevOps & Tools:** Git, CI/CD Pipelines, Docker, Linux, VM Deployment
- **Testing & QA:** Unit Testing, CI/CD Pipeline Validation
- **ML/DL & AI:** PyTorch, LangChain, LangGraph, CNN, Transformer, RAG pipeline, Agentic AI, Knowledge Distillation
- **Model Architectures:** ResNet, UNet, 3D-UNet, Swin-UNet, UNETR, DNABERT-2, YOLOv8, YOLOv11
- **Other:** Agile Development, Code Review

Experience

Software Development Intern **Jan 2026 – Present**
CalHVAC, New York (Remote)

- Developed and deployed 3D HVAC simulation tool using Python, React, and Three.js, merging 10+ pull requests and improving design workflow efficiency.

Open Source Developer **Sep 2025 – Present**
Collaborating with Software Engineer from renowned company (Remote)

- Merged 13 pull requests across 2 applications — a React Native mobile app and an Electron macOS desktop app.
- Integrated WatermelonDB for offline-first data persistence, enabling 100% offline functionality with automatic sync on reconnect.
- Optimized AI workflows using LangChain and LangGraph, reducing multi-step task execution time by automating data processing across modular LLM agents.

Intern **Nov 2025 – Dec 2025**
Bangladesh Satellite Company Limited (BSCL), Dhaka

- Automated database retrieval and reporting with Python scripts, processing 40,000+ records from Excel datasets for internal stakeholders.

Software Development Intern

Jun 2025 – Aug 2025

Academic & Admission Pathshala (EdTech), Dhaka

- Developed functionalities of 2 key pages (homepage and dashboard) using React js

Projects

Thesis: Auto Annotation of 3D QCT Image Using Deep Learning

Jan 2026 – Present

Supervisor: Dr. Mahmuda Naznin, Professor, CSE, BUET

- Training 4 architectures (3D-UNet, UNet, Swin-UNet, UNETR) on a 22 GB+ DICOM dataset, achieving 97%+ accuracy for 3D QCT vertebral segmentation.

Lightweight Knowledge Distillation of Transformer Models for Biological Sequence Classification

Jan 2026 – Present

CSE-472 Machine Learning Project

- Compressing DNABERT-2 (117M parameters) into a 26M-parameter student model, retaining 93.31% accuracy (vs. 96.71% teacher) with 4.5x inference speedup.

IEEE Video & Image Processing (VIP) Cup

Jul 2025

IEEE Signal Processing Society

- Evaluated YOLOv8, YOLOv11, and TransNetV2 on a 2 GB+ dataset, achieving 90%+ accuracy in shot-boundary detection, improving over the 85% baseline.

Career Studio – React.js, FastAPI, CI/CD, VM Deployment

Jan 2025 – Jul 2025

- Deployed an AI-powered CV builder on Azure VM with FastAPI backend and React.js frontend, streamlining resume creation for users.
- Configured a CI/CD pipeline automating build, test, and release, reducing deployment time and enabling continuous delivery.

Digital Store – React, Node.js, Express, SQLite, bKash API, LangChain

[Github](#) 2026

- Built a full-stack e-commerce platform with product catalog, cart, checkout, and order tracking using React (Vite) frontend and Express/SQLite backend.
- Integrated bKash Tokenized Checkout payment gateway with token-based authentication, idempotent transactions, and refund processing.
- Implemented a RAG pipeline and agentic AI workflows for intelligent product assistance and automated customer interactions.

FaceBuet – React.js, Django, Oracle, Material UI

Mar 2023 – Jun 2024

- Developed a social media platform for 20+ BUET students with 4 pages for posts, profiles, messaging, and search using modular React.js components.
- Engineered a Django REST backend with Oracle database, optimizing SQL queries and search indexing across multiple tables.

MovieDatabase – Java, JavaFX

Jun 2022 – Aug 2022

- Developed a JavaFX application cataloging 300+ movie entries with search, filter & several functionalities

Certifications

- [CUET Datathon 2025 – Finalist](#)
- [BSCL Internship Completion Certificate](#)
- [Solvio AI Hackathon – Round 2 Qualifier](#)
- [CUET AI Hackathon 2025, CUET – Participant](#) (Trained & Tested Whisper and Wav2Vec2 ASR models for Bengali speech recognition).