

Tuhin Chowdhury

Software Engineer

 tuhin.sec@gmail.com

 Chittagong , Bangladesh

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EDUCATION

Shahjalal University of Science & Technology,

Bachelor of Science in Computer Science & Engineering

Overall CGPA : 3.27 / 4.00 (Final Year CGPA : 3.7/4.00)

Thesis : An Automatic System for Identifying and Categorizing Tribal Clothing Based on Convolutional Neural Networks

09/2017 – 04/2022 | Sylhet , Bangladesh

PUBLICATIONS

BLDAR: A Blending Ensemble Learning Approach for Primary Energy Consumption Analysis.

(Book Chapter - 2025),

Springer ↗

Implemented BLDAR, a novel blended ensemble model integrating LightGBM, Decision Tree, AdaBoost, and Random Forest regressors for forecasting primary energy consumption. The model achieved a state-of-the-art 90% R2 score, establishing a new benchmark for sustainable energy analytics.

An Automatic System for Identifying and Categorizing Tribal Clothing Based on Convolutional Neural Networks (2022), IEEE ↗

Developed a CNN-based system using the custom-made 'TribalBd' dataset to classify Bangladeshi tribal dresses, achieving 89.97% accuracy with YOLOv5, surpassing YOLOv6 (86.24%) and YOLOv7 (71.28%).

PROFESSIONAL EXPERIENCE

Software Engineer, Golden Harvest Infotech Limited

02/2023 – Present | Dhaka , Bangladesh

- Designed a RAG-based multi-agent system in the healthcare domain for processing and retrieving insights from medical data (prescriptions, reports, patient records)
- Developed a desktop application integrated with hardware camera (via SDKs) to capture customized images, perform real-time image analysis, and securely upload digitized church records in bulk to the cloud for auditing and data entry.

Software Engineer(Intern), Rokkhi IT Limited

06/2022 – 01/2023 | Dhaka, Bangladesh

Implemented an automated document processing feature by building a Java service that connects to an EasyOCR Python module, reducing manual data entry by over 50%

PROFESSIONAL PROJECTS

AI-Driven Hospital Management System ,(MHM, Houston , TX),

Tech Stack : Python, Openai 4 , ChromaDB, Mcp, N8N, Betterstack, AWS S3, PostgreSQL, Docker.

Built an AI-driven hospital management system with microservices and a RAG-based AI agent, reducing scheduling conflicts by 40% and improving patient support efficiency.

Church Census Records Archiving Project , (Family Search , Utah),

Tech Stack : C# , .NET 8 , WPF , GraphQL ,SQLite , XAML , Python , Nikon SDK

Engineered a high-throughput DSLR imaging system with real-time spatial analysis and line-segment validation, capturing 1000+ images per hour with minimal post-processing.

Invoice and Billing Documents Data Extraction,

Tech Stack: Python, PaddleOCR, LlamaIndex (Llama 3.1), OpenAI APIs, PyTorch

Built a high-accuracy OCR system, (PaddleOCR) with a Llama 3.1 agent for context-aware extraction of structured table data from large-scale documents.

Satellite Frequency Renting and Auto Billing System (Bangladesh Satellite Corporation , Dhaka),

Tech Stack : Java , Spring Boot , JasperSoft , Sendgrid , PostgresSQL

Developed a Spring Boot-based automated billing system for BSCL to calculate satellite frequency usage by TV channels on a pay-per-use model. Integrated JasperReports for dynamic invoice generation and reporting, reducing manual reporting efforts by 50%

SKILLS

Programming Languages

Python(Fluent), Java 21(Fluent), C++(Fluent), C(Fluent), C# (Basic)

AI, Machine Learning & Data Science:

MATLAB, PyTorch, TensorFlow, Scikit-Learn, LlamaIndex, Transformers, Pandas, Numpy, OpenCV, YOLO, HuggingFace

Application Frameworks:

Spring Boot, FastAPI, .NET 8, Flutter, Android

Tools & Platforms

AWS S3, PostgreSQL, Docker, Linux, CI/CD, Git, GitLab, Jasper Reports, LaTeX, Overleaf

ACHIEVEMENTS & HONOURS

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|---|--------------------------------|
| Best Emerging Engineer Award , Golden Harvest Infotech | 2024 Dhaka, Bangladesh |
| Recognized for outstanding performance and innovative contributions to engineering projects. | |
| Selected for Bangladesh-Japan Engineers Training Program , Miyazaki University | 2022 Miyazaki , japan |
| Competitively selected for an international training program organized by Miyazaki University in collaboration with the Bangladesh Government, focused on advanced engineering practices and cross-cultural technical exchange. | |
| Best IoT Project Recognition , University Course Project | 2019 Sylhet, Bangladesh |
| Awarded for developing an innovative Smart Home automation system. | |
| First Prize, Intra-Batch Programming Contest , University | 2018 Sylhet , Bangladesh |
| Secured first place in competitive programming contest among batch peers. | |
| First Prize, Essay Writing Competition , University Campus | 2017 Sylhet, Bangladesh |
| Secured first place in university-wide essay writing competition. | |
| District Commissioner Scholarship Award , Academic Excellence 2016 | 2016 Chittagong , Bangladesh |
| Awarded scholarship for achieving GPA 5.0/5.0 in Higher Secondary Certificate examination. | |

TEACHING & MENTORSHIP

Java & Data Structures Instructor

Mentored over 10+ students, resulting in improved programming skill and successful project completions.

Instructor, | Unmesh Academic Care

Sylhet

Taught Mathematics and Physics to college-level students, delivering comprehensive lessons and supporting academic development.

PARTICIPATIONS

IEEE Computer Society Bangladesh Chapter Symposium

11/2024

Research abstract accepted for presentation.

Fourth International Conference on Emerging Research in Electronics, Computer Science and Technology (ICERECT), IEEE

03/2022

Presented paper on Computer Vision

Facebook Developer Circles Challenge | META

02/2021

Participated in Chatbot-Developments Hackathons for Messenger Platform and placed in top 20 .

ICPC Intra University Selection Programming Contest

10/2019

Our team ranked top 50 among 900 teams.

Leading University National Programming Contest

02/2018

Team ranking was 72 out of 190 teams.

EXTRACURRICULAR ACTIVITIES

Computer Society, General Secretary

11/2021 – 11/2022

Organized the university's annual programming contest and coordinated departmental technical events.

Bohubrihi - Edtech Platform, Campus Director

01/2021 – 01/2022

Organized programming sessions and workshops on behalf of Bohubrihi to enhance student skills.

SECPA -University Photography Club, Vice President & Instructor

01/2020 – 01/2022

Served as Image Aesthetics Instructor and conducted workshops on visual composition and photography techniques.

My work has won several national and international awards at photography exhibitions.

HULT Prize SEC, Founding Campus Director

01/2020 – 01/2021

Organized online seminars and programs to promote social entrepreneurship on campus.

REFERENCES

Ashraful Islam, PhD Candidate, Department of Computer Science, University of Regina, Canada
Email : aiy497@uregina.ca

Md. Ariful Islam, Chief Technical Officer & System Architect, Golden Harvest Infotech Limited
Email : arif@inspi8bd.com