Faysal Ahmmed

Software Engineer

Dhaka, Bangladesh | +880 1737-498963 | ahmmed.faysal2001@gmail.com
github.com/Faysal1000 | faysalahmmed.vercel.app



Summary

Software engineer with hands-on backend experience in NestJS, ASP.NET, PostgreSQL, and Redis, and a research background in machine learning with 11 peer-reviewed publications. Experienced in REST APIs, RAG retrieval, and agentic AI workflows, and in deploying research prototypes as web applications.

Education

American International University-Bangladesh (AIUB) 2026
BSc in Computer Science and Engineering, major in Information Systems, CGPA 3.99/4.00

Rajshahi Shikkha Board Model School and College 2020
Higher Secondary Certificate (HSC), Science, GPA 5.00/5.00

Mobarokpur High School 2018
Secondary School Certificate (SSC), Science, GPA 5.00/5.00

Experience

Advanced Machine Intelligence Research Lab (AIUB) Mar 2026 – Present
Research Assistant *Part-time Jan–Feb 2026*

- Developed scalable training pipelines and implemented multimodal AI methods on the NVIDIA DGX Spark platform.
- Built a Bengali multimodal fake news dataset and a Mixture-of-Modality-Experts model to detect misinformation.
- Led research teams, developed data collection software, optimized experimental pipelines, and mentored junior researchers while contributing to peer-reviewed publications in trustworthy AI.

Zorg IT Jan 2026 – Mar 2026
Junior Backend Developer

- Developed a scalable Lead Management System using NestJS, PostgreSQL, Prisma, Redis, BullMQ, and Swagger.
- Designed and implemented a RAG-based architecture with hybrid search to retrieve relevant product data efficiently.
- Implemented agentic AI systems that produce context-aware, decision-driven automated responses for business workflows.

Goinnovior Jul 2025 – Oct 2025
Junior Web Developer (Intern)

- Developed backend REST APIs for a mental health application using ASP.NET and MySQL.
- Designed and managed database structures for secure and efficient handling of sensitive user records.
- Worked with the product team to connect backend services to responsive React and Tailwind CSS frontends.

Projects

Universal Chatbot | *TypeScript, NestJS, React, Python, FastAPI, PostgreSQL, Redis, Docker* GitHub | Live

- Built a self-hosted, 8-microservice RAG platform with bilingual document Q&A, cited streaming responses, an admin console, and an npm chat widget; implemented OCR, vision-model extraction, and structure-aware chunking for document ingestion.
- Engineered hybrid retrieval with pgvector and PostgreSQL full-text search, built an LLM gateway for cloud and self-hosted models, fallback chains, retries, and analytics; deployed via Docker and GitHub Actions on Hugging Face Spaces.

DriveVault | *React, NestJS, PostgreSQL, Prisma, Google OAuth, Google Drive API* Live

- Built a storage routing engine and command center that manages many Google Drive accounts as one virtual hard drive, with real-time storage analytics.

Skin Cancer Detection with Explainable AI | *Python, CNN, Vision-Language Model, Grad-CAM++* GitHub | Live

- Developed a classifier reaching 86% accuracy with Grad-CAM++ heatmaps and explanations from a fine-tuned MedGemma model, deployed as a public demo on Hugging Face Spaces.

Technical Skills

Languages: Python, TypeScript, JavaScript, C++, C#, Java, SQL
Backend: NestJS, ASP.NET MVC, REST APIs, Prisma, BullMQ, Swagger
Frontend: React, Tailwind CSS
Databases: PostgreSQL, MySQL, SQL Server, Redis
AI and ML: PyTorch, TensorFlow, Keras, RAG, Hybrid Search, Agentic AI, Vision-Language Models
Tools: Git, GitHub, GitHub Actions, Docker, Postman, Linux (Ubuntu), Google Colab, LaTeX

Awards and Honors

- Best Thesis in Artificial Intelligence (Medical Sector), American International University-Bangladesh
- Dean's List Honors, 8 semesters, American International University-Bangladesh
- 80% Academic Scholarship on tuition fees, American International University-Bangladesh

Publications

Peer-reviewed. First author on items 1 to 8.

1. F. Ahmmed, A. Alaly, S. Mehnaj, A. R. Antik, M. F. Mridha. From Heatmaps to Language: Explainable Skin Cancer Diagnosis Using CNN-VLM Integration with an Expert-Annotated Dataset. *Artificial Intelligence in Medicine, 2026*. DOI: 10.1016/j.artmed.2026.103499
2. F. Ahmmed, A. Alaly, S. Mehnaj, A. R. Antik, M. J. Hossen, M. F. Mridha. CBAM-Xception: An Attention-Guided Framework for Skin Cancer Classification. *Journal of Imaging Informatics in Medicine, 2026*. DOI: 10.1007/s10278-026-01999-9
3. F. Ahmmed, R. S. Rafsan, A. Akther, Mohaimen-Bin-Noor. GRANet-Lite: A Lightweight Ghost-Residual Attention Network for Breast Cancer Classification with Comprehensive Histopathological Preprocessing Analysis. *Smart Health, 2026*. DOI: 10.1016/j.smhl.2026.100661
4. F. Ahmmed, R. S. Rafsan, M. Mansib, A. Akther, A. E. Esika, Mohaimen-Bin-Noor. SkinFusionNet: Multi-backbone Spatial Fusion for Robust and Explainable Melanoma Classification. *Photodiagnosis and Photodynamic Therapy, 2026*. DOI: 10.1016/j.pdpdt.2026.105668
5. F. Ahmmed, M. S. Al Huda, M. A. Ali, M. M. M. Islam. Explainable Ensemble Learning with Stain Normalization and Deep Feature Extraction for Acute Lymphoblastic Leukaemia Classification. *Healthcare Technology Letters, 2026*. DOI: 10.1049/htl2.70091
6. F. Ahmmed, A. R. Antik, A. Alaly, S. Mehnaj, M. S. Al Huda, M. A. Ali. BTdiagAI: A Web-Deployed Hybrid Framework for Brain Tumor Classification Using Optimized MRI Preprocessing and Deep Learning Fusion. *Healthcare Technology Letters, 2026*. DOI: 10.1049/htl2.70053
7. F. Ahmmed, A. R. Antik, A. Rahman, A. Islam, A. Alaly, S. Mehnaj, P. Saha, T. Hossain. Arduino-Controlled Multi-Function Robot with Bluetooth and nRF24L01+ Communication. *International Journal of Robotics and Control Systems, 2024*. DOI: 10.31763/ijrcs.v4i3.1517
8. F. Ahmmed, R. S. Rafsan, A. Alaly, S. Mehnaj, A. R. Antik, M. F. Mridha. SmartBin: A Lightweight MobileNetV3Small-Based Real-Time Waste Sorting System with Arduino Integration. *2026 4th International Conference on Computing Advancements (ICCA), 2026*.
9. M. A. Ali, M. Ahammad, N. Nawshad, S. Shifat, M. F. Mridha, F. Ahmmed, N. Tania. ParkinNet: A Novel Approach to Classifying Alzheimer's and Parkinson's Diseases Using Brain Structural MRI. *Advances in Distributed Computing and Artificial Intelligence Journal, 2025*. DOI: 10.14201/adcaij.32178
10. A. Akther, A. A. Akhi, I. S. Shairy, A. Alaly, F. Ahmmed, M. S. U. Miah. Lightweight, Stain-Normalized White Blood Cell Classification with Explainability and Web-Deployed Prototype. *ICCIT 2025 (conference), December 2025*. DOI: 10.1109/ICCIT68739.2025.11490503
11. R. S. Rafsan, M. S. Sarwar, F. Ahmmed, Mohaimen-Bin-Noor. TR-IncepResNet: A Template Registration Guided Inception-ResNet Framework for Robust Brain Tumor Detection. *ICCIT 2025 (conference), December 2025*. DOI: 10.1109/ICCIT68739.2025.11491060

References

Dr. Muhammad Firoz Mridha
Professor and Head, Department of Computer Science
American International University-Bangladesh
firoz.mridha@aiub.edu | +880 1674-791594

Md. Abdul Halim
Assistant General Manager
Bangla Phone Limited
halimpub@gmail.com | +880 1717-636891