Raiyan Bin Sarwar

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EDUCATION

University of Tennessee, Knoxville | Ph.D., Learning, Design & Technology — Aug 2026 – Present
Concurrent M.S., Computer Science. Fully funded graduate assistantship. Advisor: Dr. Kelly Boles (Ph.D., Stanford University).

Bangladesh University of Professionals | B.Sc., Computer Science & Engineering — Jul 2022 – Jul 2026

RESEARCH

Graduate Research Assistant | University of Tennessee, Knoxville — Aug 2026 – Present

- **Community Data Libraries (ACM JCDL paper in preparation, co-author):** designing the infrastructure for an open-source project that helps communities and K–12 teachers find and use local data.
- **Wearable AI for learning (starting Spring 2027):** first-person video from Meta AI glasses, analyzed with vision-language models, to observe learning as it happens.
- Zakiah R., **Sarwar R. B.**, Iffat S., Arif H. B., Suha S. A. *CerviFuse: Cross-Modal Feature Fusion of Cytology and Colposcopy Images for Automated Cervical Cancer Severity Classification.* Under review, *Smart Health* (Elsevier).

EXPERIENCE

Co-founder & COO | Rectify Learn, AI study platform — May 2025 – Aug 2026

- Grew the platform to **150+ active users** and won acceptance into **4 startup programs** (Microsoft for Startups, GitHub for Startups, Notion, Miro) by running product, operations and partnerships; featured in The Daily Star.

Trainee Developer (Industrial Attachment) | Brain Station 23 — Jul 2025 – Aug 2025

- Cut response time by **10%** by reworking the AI workflow of SentimentScope, which summarizes and analyzes web and YouTube text; shipped it as a Flutter app (Azure AI Foundry, GPT-4o mini, Django, MongoDB). Now a manuscript.

SHIPPED PROJECTS

Rectify Learn | React, Django, PostgreSQL + pgvector, Docling — rectifylearn.app

- Built a RAG pipeline that turns uploaded notes into quizzes and flashcards (top-5 pgvector/HNSW retrieval) and times reviews with a 0–100 Mastery Score + modified SM-2; whitepaper won **Silver (AI) among 200+ teams**.

SereneQuran | LLM API, WebSocket — serenequran.netlify.app

- Built an AI web app that returns Quran and Hadith verses for a reader's mood through one LLM API call; reached **1,700+ users in month one** (1,000+ in 3 days) and **2 national news features** (The Daily Star, The Business Standard).

CerviFuse | PyTorch, ResNet50, ConvNeXt-Tiny, Grad-CAM++ — undergraduate thesis

- Built a multimodal model that fuses cytology and colposcopy images to grade cervical cancer severity at **94.51% test accuracy** (3 classes); benchmarked **5 CNNs and 3 fusion strategies** across 26 training runs, with Grad-CAM++ explanations.

AI Fitness Planner | React, TypeScript, OpenRouter (Llama 3.3 70B), Docker — live demo | code

- Shipped an app that turns **8 profile inputs** into a weekly training plan; JSON-schema validation catches malformed model replies before they reach the UI. Built from Figma with **0 UI libraries**; Docker image on GHCR.

BUP Guardian | Python, LangChain, Azure OpenAI, FAISS, Playwright — demo on request

- Built a hybrid RAG assistant that answers in **3 languages** (English, Bangla, Banglish) by routing each question to **2 knowledge sources**, a FAISS policy index and a live web layer, keeping answers grounded and current.

DrikAI | chatbot serving **6 AI models** via Azure AI Foundry API; **100+ users** — drikai.netlify.app

LEADERSHIP

GitHub Campus Expert | GitHub Education, volunteer — Sep 2024 – Present

- **Fully funded delegate to GitHub Universe 2026**, the only Bangladeshi in the Campus Experts delegation; selected as **1 of about 24 global application reviewers** (2026); co-published 4 posts with GitHub Education (30K+ views).
- Secured GitHub sponsorship for **3 student events reaching 2,400+ attendees** (IEEE Branchfest 2025, Circuit Clash 1.0, Industry Tech Talk S01); onboarded 150+ students to the Student Developer Pack and mentored the 2025 trainee intake 1:1.

Senior Microsoft Student Ambassador | Microsoft, volunteer — Sep 2023 – Present

- Ranked **17th of 2,200+** ambassadors (July 2024); moderated a **10,000+ member** global Discord and a Microsoft Reactor session (**1,000+ viewers**); 4 Microsoft blog articles.

HONORS

- Fully funded delegate, GitHub Universe 2026; Silver Award (AI), Blockchain Olympiad Bangladesh 2025; Harvard HPAIR delegate (3x); Young Leader Fellow, Your Big Year.

SKILLS

Code & web: Python, TypeScript, JavaScript, SQL, C++, Java, R; React, Django, Flutter, Firebase, PostgreSQL, MongoDB, Docker
AI & UX: LangChain, RAG, FAISS, pgvector, Azure OpenAI, Azure AI Foundry, PyTorch; Figma, usability testing