Zarin Tasnim Roichi

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SUMMARY

Computer Science undergraduate with hands-on experience in backend development and applied machine learning. Worked on systems where transformer-based and large language models are trained and integrated into web applications. Experienced in SQL-based web development, backend APIs, ML pipelines for text, image, and multimodal data, and IoT-based automation projects.

EDUCATION

2021 – Dec 2025	**B.Sc. in Computer Science & Engineering**, Ahsanullah University of Science & Technology (AUST) (CGPA: 3.405 / 4.00)
2019	**Higher Secondary Certificate (H.S.C.)**, Holy Cross College, Dhaka (GPA: 5.00 / 5.00)
2017	**Secondary School Certificate (S.S.C.)**, A.V.J.M Govt. Girls High School (GPA: 5.00 / 5.00)

THESIS & PROJECTS

Machine Learning & AI Projects

– **Bengali Fake Review Detection:** Trained and evaluated BanglaBERT, XLM-R, mBERT, Gemma-2B models with dataset balancing and error analysis (achieved ˜98% F1-score).

– **Sentiment Analysis of Bengali Movie Reviews:** Fine-tuned transformer models using LoRA/PEFT and achieved ˜97% accuracy.

– **Multimodal Fake News Detection:** Combined text-based transformers with image models using late-fusion techniques.

– **ML-Powered Fake News Website:** Deployed trained models behind Python-based APIs for real-time web inference.

– **Dataset Preparation (Ongoing):** Preparing an SOS dataset with audio + text data for emergency classification.

Software Development Projects

– **Employee Time & Attendance Tracker:** Full-stack web system with role-based access, dashboards, and SQL-backed data management.

– **TimeVista Website:** Backend-driven website with database connectivity and structured information flow.

– **AUST Connect:** University-only social media platform with posts, notifications, chat, and access control.

– **Bus Ticket Management System:** SQL-based backend system for ticket booking and management.

Hardware & IoT Project

– **Offline Voice-Controlled Home Automation:** Arduino Uno/Nano + Bluetooth control, MIT App Inventor Android app for voice commands, RFID security, and command-mapping (exact-match vs fallback) with error handling.

SKILLS

Programming Languages	C, C++, Java, Python, JavaScript, PHP, HTML, CSS, Assembly Language, LaTeX
Machine Learning & AI	Transformers, Large Language Models (LLMs), Bengali NLP, multimodal learning (text + image), dataset preparation and preprocessing, model training/testing, error analysis and evaluation
Frameworks & Libraries	PyTorch, TensorFlow, Hugging Face Transformers, Scikit-learn, Pandas, NumPy
Databases & Backend	MySQL, SQL Server, SQL-based data handling, backend API integration, localhost-based deployment
Data Mining & Analytics	Data preprocessing and basic data mining using WEKA
Tools & Platforms	Git/GitHub, VS Code, Visual Studio, XAMPP, MATLAB, Arduino IDE, Android Studio, Cisco Packet Tracer

LANGUAGE PROFICIENCY

Bangla   Native
English