





# Zarin Tasnim Roichi

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## SUMMARY

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Computer Science and Engineering 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

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- 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

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### 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

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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

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Bangla Native  
English