

## RESEARCH INTEREST

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Human Computer Interaction, Responsible AI, Applied NLP

## EDUCATION

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University of Dhaka - Bachelors of Science in Software Engineering(BSSE), Graduated in **Feb 2025**

**3.83/4.00**

Accomplishment: Awarded Govt Scholarship for academic excellence in undergraduate program.

## PUBLICATIONS

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**Bangladesh's AI Readiness: Perspectives from the Academia, Industry, and Government:** Sharifa Sultana, **Rupali Tasnim Samad**, Mehzabin Haque, Zinnat Sultana, Zulkarin Jahangir, B M Mainul Hossain, Rashed Mujib Noman, Syed Ishtiaque Ahmed. **Paper accepted into CHI 2026 Poster(A\*)**

LLMs are increasingly integrated into software systems, requiring outputs that meet both syntactic and semantic constraints. Drawing from AI safety literature and formal methods, we identify trends, gaps, and propose an initial constraint calculus to safeguard LLM outputs in software.

**Bangladesh AI Readiness: Gaps in Curriculum, Infrastructure, and Governance.** Sharifa Sultana, **Rupali Tasnim Samad**, Mehzabin Haque, Zinnat Sultana, Zulkarin Jahangir, B M Mainul Hossain, Rashed Mujib Noman, Syed Ishtiaque Ahmed. Paper is accepted to **COMPASS 2026**.

**Dynamic Test Case Selection (TCS) with LLM.** A. Paul, **R. Tasnim**. Extended Abstract, *Accepted* in Samsung Best Paper Award May, 2024

I conducted a survey in Samsung R&D Institute, Bangladesh and found TCS needs are dynamic across projects. No existing tools can handle such dynamic TCS needs. So we used LLM for TCS - proposing Knowledge Graph structures and custom embeddings on project vocabs.

## PATENT

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Filed for patent in Samsung HQ:

1. **An Optimization of dLoRA Architecture** - filed for patent, Samsung R&D Institute, Bangladesh Jun 2026
2. **Automated Face Anonymization for video content** - filed for patent, Samsung R&D Institute, Bangladesh Apr 2026

## RESEARCH EXPERIENCE

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University of Toronto, University of Illinois Urbana Champaign | **Dr. Syed Ishtiaque Ahmed, Dr. Sharifa Sultana Ela** | **Responsible AI, AI Readiness**

Submitted two papers: one accepted as a CHI poster and another currently under review at ACM COMPASS.

University of Toronto, Pennsylvania State University | **Dr. Syed Ishtiaque Ahmed, Dr. Tanusree Sharma** | **Privacy in AI, HCI**

Working on a paper that investigates privacy risks associated with shared large language models, with a particular focus on contexts in the Global South.

**Samsung R&D Institute Bangladesh | Engineer | Biz Solution Group**

- Samsung Best Paper Award: Hybrid RAG Personalization was selected as one of the top three ideas from SRBD and nominated to HQ.
- Mobile Developer Conference: Automated Face Anonymization for Live Video Content was the only idea selected from SRBD for submission to the Samsung Mobile Developer Conference of 2025.
- AIPoC Contest– A method to reduce false positives in stress measurement using wearable devices was awarded “People’s Champion” in the AIPoC contest, receiving the highest votes from 293 engineers. Owing to its novelty, management recommended pursuing a DOI for patent filing, which is currently in progress.

Analyzed their requirements for a software product that translates android app to ensure localization that respects the human value of universalism. We devised a software requirements specification and system design as part of IEEE ICSE. We designed Localization of Android Apk accessibility.

## SCHOLARSHIPS

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- Received Govt. Scholarship for undergraduate result in University of Dhaka 2025
- Received Govt. Scholarship in Higher Secondary Certification Examination, Bangladesh. 2017-2019

## AWARDS

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- Received **Excellence in Research Award**, 2025 2nd Quarter, Samsung R&D Institute, Bangladesh. Nov, 2025
- AI Proof-of-Concept (PoC) received the highest number of votes in Samsung R&D Institute, Bangladesh's internal AI PoC contest.. Jul, 2025
- **Champion | UXplorer Quest (UI/UX design contest)**, *Cefalo presents ITverse 2023*
- **Champion | HackTheVerse (Hackathon Blockchain Challenge)**, *Cefalo presents ITverse 2023*
- **First Runner Up | TechTales (Software Project Showcasing)**, *Cefalo presents ITverse 2023*
- **Second Runner Up | INTER UNIVERSITY IDEATHON CONTEST**, *NDUB CSE FEST 2023*
- **Second Runner Up | Project Showcasing**, *IEEE BUP BRANCH FEST 2023*

## DEVELOPMENT SKILLSETS

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|----------------------------------|--------------------------------------------------------------------------------------------------|
| <b>Languages:</b>                | Python, JS, Java, R, C, C++, SQL, Bash                                                           |
| <b>Libraries and Frameworks:</b> | MEAN, OpenCV, Scikit-Learn, Hardhat, Actix Framework (Rust), BNLTk, PyTorch, llama.cpp, ast, MCP |
| <b>Development Tools:</b>        | Git, Linux/UNIX, Remote Server management, Knowledge Graph                                       |

## PROJECTS

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### AirBNB recommendation system

Developed an NLP-driven Airbnb recommendation system leveraging user reviews and textual data to generate personalized property suggestions based on sentiment and preference extraction.

### AI Maturity Assessment Tool

LLM based tool for evaluating AI maturity of software companies using **FastAPI, Next.js and MongoDB**.

### BSL - Bangla Sign Language Detection & Learning Platform

Interactive Bangla sign language learning website with activity recognition feature using **FastAPI, Angular and Sqlite**.

### Earth and Beyond Earth

Immersive educational website exploring countries and solar system using **FastAPI, React and Sqlite**.

### DU Bus Tracking System

Real-time bus location display to track the current position of DU buses using **Flutter**