

Reyadath Ullah

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EDUCATION

2020 - 2025 **B.Sc. in Computer Science and Engineering** **CGPA: 3.73/4.00 (Top 10%)**
UNIVERSITY OF DHAKA, BANGLADESH

RESEARCH INTERESTS

- **Federated Learning, Edge Intelligence, Mobile Computing, On Device AI, IoT**

PUBLICATIONS

- [1st Major revision under review at FGCS] *Data-Diversity-Aware Quantization for Semi-Synchronous Federated Deep Reinforcement Learning in Vehicular Edge Computing*. Ittehad Saleh Chowdhury, **Reyadath Ullah**, Md. Abdur Razzaque. [Manuscript PDF]
- *Federated Deep Reinforcement Learning for Optimal Resource Allocation in Vehicular Edge Computing*. **Reyadath Ullah**, Ittehad Chowdhury, Md. Abdur Razzaque, Palash Roy, Mohammad Mehedi Hassan. 13th SAI Computing Conference 2025, London, United Kingdom.
- *Reducing Complexity in Exporting RMG Products Using Artificial Intelligence in Bangladesh*. **Reyadath Ullah**, Ahmed Shakibul Islam, Toma Ray, Nusrat Najnen Eva. Supply Chain Insider, Volume 12, Issue 01, pp. 61-85.

RESEARCH EXPERIENCE

Remote Research Collaborator, CiteCast Project, William & Mary Sept 2026 - Present

- Collaborating on an IMLS-funded project to identify and preserve web resources referenced in archived US television news, alongside Old Dominion University and the Internet Archive.
- Developing multi-modal machine learning and deep learning models for web citation detection under the supervision of [Dr. Alexander C. Nwala](#) and [Dr. Yanfu Zhang](#).

Researcher, Green Networking Research Group, University of Dhaka Sep 2023 - Present

- Co-designed **DA-FeDRL**, a TD3-based scheduler that jointly adapts device selection and bandwidth allocation, improving accuracy while reducing energy use in simulations.
- Developed **DQS-FeDRL**, a framework integrating **data-diversity-aware quantization** and **Bayesian availability-aware scheduling** to optimize communication efficiency and straggler resilience in Vehicular Edge Computing.

INDUSTRY EXPERIENCE

Engineer I, Samsung R&D Institute Bangladesh, Dhaka Aug 2025 - Present

- Migrated the **Samsung Tizen Emulator** backend from legacy QEMU 2.3.4 to **QEMU 9.2.4** and redesigned the UI architecture with **SDL2**, replacing Qt to improve cross-platform performance.
- Developed **Tizen Agent Skills (Open Source Repo)**, an open-source Node.js/TypeScript toolkit enabling AI coding assistants (Claude, Gemini, Cline) to automate Tizen SDK workflows via natural language, including app deployment, GDB/CDP remote debugging, and Playwright testing.
- Developed and published the **Tizen VS Code Extension** on the [VS Code Marketplace](#).
- Researching and drafting patents for distributed, federated-learning-based recommendation systems to drive AI feature recommendations across Samsung devices.

Python Developer (Team Lead), Turing (Remote)

Dec 2023 - Dec 2024

- Led a distributed team of **6-8 engineers** improving data pipelines for training AI models.
- Built and maintained **Python** and shell automation for large-scale data preparation and deployment.

Python Instructor, CodexPro (Remote)

Jan 2023 - Aug 2023

- Taught **basic to intermediate Python** (English batches) to students with diverse backgrounds.
- Helped design and maintain **course materials and assignments** for Python and Scratch.

PROJECTS

Embedded & Systems Projects

Device Drivers for STM32F4xx Microcontrollers

C / C++

- Developed register-level **I²C**, **SPI**, and **UART** drivers from scratch for reliable embedded communication without external HALs.

DUOS (RTOS) for ARM Cortex-M4

C / ARM Assembly

- Built a **real-time operating system** featuring priority-based scheduling, context switching, and synchronization primitives.

Software Projects

CoLab

FastAPI, Python, React

- Engineered the REST API backend and data models for a **collaborative project-sharing platform**.

DormBuddy

Python, Spring Boot, React

- Implemented core listing, search flows, and backend logic for a **student hostel-finding application**.

Other Notable Work

- **CSEDU App** (Flutter/Firebase), **Project Z** (retro 2D C/C++ games via SDL), and Arduino-based sensor prototypes.

SKILLS

Programming	C/C++, Python, Java, JavaScript, ARM Assembly, Dart
Systems & Tools	Linux/macOS, Git, STM32/embedded C on ARM Cortex-M4, basic Arduino prototyping, socket programming
Frameworks & Data	PyTorch, Flower (federated learning), React, Flutter, Spring Boot, JavaFX, SDL; PostgreSQL, MongoDB, Firebase, SQLite

COMPETITIVE PROGRAMMING & CTF

- **ICPC Asia Dhaka Regional 2024:** 54th place (**Top 17%** nationally); solved **900+** problems across online judges. Profiles: [Codeforces](#), [LightOJ](#), [UVA](#), [StopStalk](#).
- **CTF: DU CTF 2023** - 2nd Runner Up; finalist in **EWU National Robofest CTF 2024** and **BUET CTF 2024**.

STANDARDIZED TESTS

IELTS Academic	Overall: 8.0 (Listening: 9.0, Reading: 8.0, Writing: 7.0, Speaking: 7.5)
GRE General Test	Verbal: 151 (43%), Quantitative: 162 (57%), Analytical Writing: 4.5 (85%)