MD. Ismail Hossain

SOFTWARE ENGINEER · RESEARCHER · PROBLEM SOLVER

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Research Interest: Deep Learning, Machine Learning, Natural Language Processing, Cyber Security

Highlights

- Software Engineer at **Samsung R&D Institute Bangladesh** with over 5 years of experience in Mobile and Wearable Technologies
- Inventor of 2 granted patents of Samsung Electronics in **Wearable Technology, Real-time Audio Adaptation, and Emergency Response Systems**
- Skilled in AI, machine learning, and system-level optimization, with a strong academic foundation in Algorithms, System Design, and Distributed Computing
- 1000+ problems solved across leading platforms like **Codeforces, LeetCode, HackerRank, etc.**
- Demonstrated leadership in mentoring, research innovation, and competitive programming.

Education

University of Rajshahi   *Rajshahi, Bangladesh*
Bachelor of Science- Computer Science & Engineering   *Jan. 2015 – Apr. 2019*
CGPA: 3.57 / 4.00 (5th position)

Thesis: BigMart Data Analysis — hypothesis generation, data exploration, feature engineering, and model building)

Notre Dame College   *Dhaka, Bangladesh*
Higher Secondary Certificate- Science Group   *July 2011 - Aug. 2013*
GPA: 5.00 / 5.00 (Govt. scholarship, position 492)

Pabna Zilla School   *Pabna, Bangladesh*
Secondary School Certificate- Science Group   *Jan. 2009 - May 2011*
GPA: 5.00 / 5.00 (Govt. scholarship, position 46)

Professional Experience

Samsung R&D Institute Bangladesh, Samsung Electronics   *Dhaka, Bangladesh*
Software Engineer   *June 2019 – Ongoing*

- Developed high-performance native mobile applications for **Android** and **iOS** using Java, Kotlin, Swift, Objective-C
- Architected the **Universal Wearable Connection & Protocol SDK** for Samsung RTOS devices (Smart Ring, Fit3 etc.)
- Led feature development for **Galaxy Fit3, Smart Ring, and Galaxy Watch8**, focusing on connectivity and user experience
- Designed **Emergency SOS** and **Find My Device** systems across Samsung's wearable ecosystem
- Developed a high-efficiency **TLV** (Type-Length-Value) data converter, transforming low-level byte streams into structured data for real-time processing
- Applied scalable software architectures (**MVC, MVVM, MVP, Clean**) for maintainable, high-quality codebases
- Executed optimization strategies reducing power and memory usage in embedded devices
- Awarded two patents for innovations in **TWS technology and Emergency Chatbot** systems
- Established robust CI pipelines to streamline project release and ensure long-term project stability
- Mentored engineers and led internal workshops on Applied AI, DSA, and system optimization
- Served as acting Team Lead during scrum meetings, ensuring smooth communication and workflow continuity

Technical Skills

- **Languages:** Java, Kotlin, Swift, Objective-C, Python, C++
- **Frameworks/Tools:** TensorFlow, Keras, PyTorch, Scikit-learn, Pandas
- **Architecture:** MVC, MVP, MVVM, VIPER, Clean Architecture
- **Platforms:** Android, iOS, Raspberry Pi, Arduino
- **Tools:** Android Studio, Xcode, VS Code, Git, Kanban
- **Operating System:** Windows, Linux, Mac
- **Core Skills:** System Optimization, Data Analysis, Machine Learning, DSA, CI/CD
- **Problem Solving:** Solved 1000+ algorithmic problems; ICPC & NCPC participant

Research & Innovation

- **TWS Mono to Stereo Mode Auto-Switching —** Patented seamless switching system (mono & stereo) for earbuds based on position detection.
- **Emergency ChatBot for Battery-Efficient Personal Emergency Response System —** Patented innovative bi-directional communication system ensuring power efficiency and personal safety during emergencies.
- **Smart Trainer for Gait Analysis —** ML-based real-time motion analysis using accelerometer and gyroscope data for posture correction.
- **Network Intrusion Detection —** ML-based hybrid sampling system improving detection precision in cybersecurity and mitigate security threats.

Volunteer Experience

Rajshahi University IT Society   *Rajshahi, Bangladesh*
Communication Secretary   *Feb 2015 – Jan. 2017*

- Managed technical partnerships with external organizations and outreach for 650+ members
- Co-developed Android training (with GDG), training 330+ participants.
- Conducted DSA workshops and mentored ICPC teams.
- Organized two annual programming contests with 200+ participants.

Awards & Achievements

Samsung R&D Institute Bangladesh, Samsung Electronics
- Code Review Award – 2024
- Excellence in Software Certification Test Award – 2024
- Icon of the Month Award – March 2024
- CTO Award – 2023
- Excellence in Innovation Award – 2023, 2021
- Excellence in Development Award – 2020

Notre Dame College
- Bangladesh Govt. Scholarship for H.S.C board examination – 2013

Language Proficiency

- IELTS Overall Score: 7.5 (L-9, W-7, S-6.5, R-7)   Test taken - Nov 2024