

# Moumita Kabir Ananna

📍 Dhaka, Bangladesh    ✉ mkanannakabir@gmail.com    ☎ +8801765689015    📄 Portfolio

in Moumita Kabir Ananna    🌐 AnannaKabir

## Professional Summary

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Passionate Embedded System Engineer with 4 years of experience in designing and delivering cutting-edge embedded solutions. Proficient in C/C++, RTOS, and microcontroller programming, with expertise in developing and optimizing embedded software and hardware. Passionate about translating ideas into practical solutions through a strong technical foundation and fascination with circuits, sensors, and emerging technologies. Collaborative and adaptable professional committed to achieving project goals in fast-paced environments while driving impactful contributions.

## Technical Skills

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**Programming Languages:** C, C++, Python, MicroPython

**Embedded Systems & Microcontrollers:** ARM Cortex-M, ESP, Raspberry Pi, AVR

**Real-Time Operating Systems (RTOS):** FreeRTOS, NuttX

**Communication Protocols:** SPI, I2C, UART, TCP/IP, CAN Bus, MQTT

**Wireless & Network Connectivity:** LAN, Wi-Fi, Bluetooth (BLE), GSM, RF

**Embedded Security:** TLS, Secure Boot, Firmware Encryption

**Development Tools & IDEs:** Keil, Eclipse, STM32CubeIDE, VS Code, Git, Proteus, CMake

**Testing & Debugging Tools:** JTAG, OpenOCD, GDB

**Hardware Design & PCB Development:** Altium Designer, Eagle, EasyEDA, SolidWorks

**AI & Machine Learning:** TensorFlow Lite, OpenCV, Edge Impulse, TinyML

**Web & Backend Development:** HTML, CSS, JavaScript, PHP, MySQL

## Education

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**B.Sc. Computer Science and Engineering**, Southeast University, Dhaka, Bangladesh    Jan 2016 – Jan 2020

- cGPA: 3.04/4.0

## Experience

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**RoboDoc Limited**, Embedded System Engineer

Dhaka, Bangladesh

Dec 2021 – Feb 2025

- Developed 15+ custom embedded solutions for industrial applications, including PCB design, optimized firmware in C/C++, Python, and MicroPython, and custom protocols to enhance data transfer efficiency and system reliability.
- Designed and developed 12 STEAM Science Kits from scratch, benefiting 5000+ students, called the [Innovation Kit](#).
- Developed security and implementation mechanisms for the [Amarpet NFC Smart Pet Tag](#), enhancing pet identification and security.
- Integrated AI/ML algorithms into IoT devices, enabling automation and analytics.
- Led 10+ workshops and trained 500+ students in IoT and robotics.
- Managed production and QC teams for high manufacturing standards.

**Rokkhi IT Solutions Limited**, Software Engineer (IoT)

Dhaka, Bangladesh

Feb 2020 – Feb 2021

- **IoT Solutions:** Designed and implemented integrated firmware and hardware solutions, ensuring seamless performance in industrial applications.
- **IoT Communication Protocols:** Engineered Wireless, Bluetooth, Radio, and MQTT protocols for efficient M2M communication.
- **Embedded Systems Development:** Developed high-performance IoT applications using STM32, ESP8266, ESP32, Atmega, Raspberry Pi, and nRF24L01+.
- **Technology Optimization:** Assessed and improved IoT infrastructure, deploying strategic solutions to improve efficiency and reliability.
- **Key Projects:**
  1. **IoT-Based Vehicle Guard:** Monitors fuel access, records timestamps, and tracks vehicle location via GSM for security.
  2. **Biometric RFID Attendance System:** Integrated biometric and RFID tech for accurate attendance tracking.
  3. **Smart Security Sensors:** Developed door and window sensors to detect and notify for unauthorized access.

## Research Project

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### Decentralized App

[Github](#) 

- Developed “Crypto Medical Shop” which is a secure decentralized e-commerce medical shop application (Dapp) based on Ethereum blockchain technology. This dapp’s operation is completely transparent and recorded on the public ledger.
- Tools Used: Solidity, Ethereum, C++, HTML, CSS, JavaScript

## Contest

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- 1st Runner-up , IoT Design Competition 2022 — University of Florida
- Finalist , Blockchain Olympiad 2020
- Participant, ICPC and National Girls’ Programming Contest 2018-2019

## Reference

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### Shahriar Manzoor

Assistant Professor and Chairman, CSE Department, Southeast University

Judge of ACM ICPC World Finals 2003-2018

President, Bangladesh Association of Problem Setters

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