# Mahmudul Hasan

Cyber Root

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## Professional Summary

Award-winning developer with expertise spanning mobile, web, IoT technologies, and Linux systems. Achieved top rankings in national skill competitions, including 1st place at Dhaka Polytechnic Institute (2025) and 2nd place at Chattogram Regional Level (2023). Proficient in Flutter for cross-platform development, Android native development with Kotlin and Jetpack Compose, backend services with Spring Boot, hardware programming with Arduino and ESP32, and Python development with Flet. Strong experience in configuring CCTV/VMS and custom VMS solutions from working at Spy Security System. Knowledge of networking, surveillance security, cybersecurity, and data structures & algorithms. Experienced Arch Linux user (5+ years) with knowledge of Kali Linux and other distributions. Diploma holder in Computer Science and Technology with a strong foundation in software development, hardware integration, and system administration.

## Achievements

**1st Place** Institute Level Skill Competition, Dhaka Polytechnic Institute (2025)

**2nd Place** Regional Level Skill Competition, Chattogram Region (2024)

**3rd Place** Institute Level Skill Competition, Bangladesh Sweden Polytechnic Institute (2023)

## Experience

### Executive Software Engineer

6 Months

Spy Security System

- Developed and maintained software solutions for surveillance and security systems
- Configured and managed CCTV systems including IP/analog cameras, DVRs/NVRs, and Video Management Software (VMS)
- Designed and deployed custom VMS solutions tailored to client requirements
- Set up network infrastructure (routing, switching, QoS) to support reliable video streaming
- Integrated CCTV/VMS with access control and other security systems

### Linux System Administrator

5+ Years

Personal & Professional Projects

- Maintained and administered Arch Linux systems for 5+ years, gaining deep knowledge of system architecture
- Utilized Kali Linux for security testing and network analysis in various projects
- Configured and optimized Linux environments for development workflows across multiple distributions
- Implemented custom shell scripts for automation of routine tasks and system maintenance
- Set up and managed development environments with containerization using Docker on Linux

### IoT Developer - Health Monitoring System

Project-based

Hardware Project

- Designed and developed IoT-based health monitoring systems using Arduino and ESP32 microcontrollers
- Implemented BMP (Blood Pressure Monitor) and ECG (Electrocardiogram) sensor integration
- Created human temperature monitoring system with accurate digital sensors
- Integrated fire sensors and motion sensors for environmental monitoring and safety applications
- Programmed microcontrollers using C/C++ for efficient and reliable operation

### Android Developer - Smart Academic Infrastructure

Project-based

Open Source Project

- Developed a comprehensive academic management Android application using Kotlin and Jetpack Compose
- Implemented automated attendance tracking system using location services and Firebase integration
- Built interactive classroom quiz functionality with real-time grading and feedback
- Applied MVVM architecture pattern for maintainable and testable code

github.com/mhcybrooted/SmartAI.git

## Education

### Diploma in Computer Science and Technology

Completed

Dhaka Polytechnic Institute

- Mobile Application Development
- Data Structures & Algorithms
- Computer Networking
- Cybersecurity Fundamentals
- Embedded Systems

### SSC

GPA: 5.00 (2021)

Ramgoti Rabbania Fazil Madrasah

## Technical Skills

### Networking & Security

- Network Configuration
- Routing & Switching
- Surveillance Systems
- Cybersecurity Fundamentals
- Kali Linux Security Tools
- Penetration Testing

### Linux & System Administration

- Arch Linux (5+ years)
- Kali Linux
- Shell Scripting (Bash)
- Package Management
- System Configuration
- Network Configuration

### Mobile Development

- Flutter & Dart
- Kotlin & Android SDK
- Jetpack Compose
- MVVM Architecture
- RESTful API Integration

### IoT & Hardware

- Arduino & ESP32
- Sensor Integration
- C/C++ for Embedded
- Circuit Design
- IoT Data Communication

### Backend & Desktop

- Spring Boot
- Python & Flet
- RESTful API Design
- SQL & NoSQL Databases
- Data Structures & Algorithms

### Cloud & DevOps

- Firebase
- Git & Version Control
- Docker
- Gradle/Maven

## Key Projects

### Network & Security Lab Setup

- Configured a home lab environment for practicing networking and security concepts
- Set up virtual machines for testing different security scenarios and network configurations
- Implemented basic surveillance system with IP cameras and monitoring software
- Practiced penetration testing techniques in controlled environments using Kali Linux

## IoT Health Monitoring System

- Developed a comprehensive health monitoring system using Arduino and ESP32 microcontrollers
- Integrated multiple sensors including BMP for blood pressure, ECG for heart monitoring
- Implemented real-time data collection and processing for accurate health metrics
- Created a responsive interface for displaying health data and alerts

## Smart Academic Infrastructure (SmartAI)

- Developed a comprehensive academic management platform for educational institutions
- Built with Kotlin, Jetpack Compose, and Firebase for Android native development
- Implemented features including attendance tracking, assignment submission, virtual classes
- Created separate interfaces for students and teachers with role-specific functionalities

github.com/mhcybrooted/SmartAI.git

## Scientific Calculator with Flet Python

- Developed a feature-rich scientific calculator application using Python and the Flet framework
- Implemented standard arithmetic operations and advanced scientific functions
- Created a responsive and intuitive user interface with Material Design components

github.com/mhcybrooted/CalculatorUsingFletPython.git