

Firdous Rahaman

IoT Developer | Embedded Systems | ML Engineer

✉️ firdousrahaman.tfg@gmail.com

📍 West Bengal, India

GitHub: github.com/firdouscgec

LinkedIn: linkedin.com/in/firdous-rahaman

Twitter: [@Firdous_TFG](https://twitter.com/@Firdous_TFG)

Instagram: [@FirdousTFG](https://instagram.com/@FirdousTFG)



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Professional Summary

IoT developer and embedded systems enthusiast specializing in building smart connected systems using ESP32, Firebase, and machine learning. Experienced in full-stack IoT — from sensor hardware to Android dashboards. Passionate about edge AI, automation, and solving real-world problems through technology.

Experience

IoT Developer

Freelance / Self-Employed

Jun 2024 – Present

Remote

- Built 5+ complete IoT systems from sensor to dashboard
- Developed Android apps with real-time Firebase integration
- Implemented ML models on ESP32 for edge computing
- Reduced client monitoring costs by 60% through automation
- ESP32, Firebase, Kotlin, TensorFlow Lite, Python*

3D Design & Prototyping Intern

CGEC (Cooch Behar Government Engineering College)

Jun – Sep 2024

Cooch Behar, WB

- Learned 3D modeling and design using Blender and FreeCAD
- Operated FDM 3D printers for rapid prototyping
- Designed functional parts and enclosures for engineering projects
- Earned certification in 3D Printing & Digital Design
- Blender, FreeCAD, 3D Printing, 3D Modeling, CAD Design*

Machine Operator & Stock Management

WBPDS — Food & Supplies Dept., Govt. of West Bengal

2021 – 2023

West Bengal, India

- Operated PDS distribution machinery and biometric verification systems
- Managed inventory and stock records for essential food supplies
- Ensured accurate record-keeping and timely distribution to beneficiaries
- Machine Operation, Stock Management, Public Service, Data Entry*

Education

B.Tech — Electronics Communication

Cooch Behar Government Engineering College

2022 – 2026

Cooch Behar, India

CGPA: 7.5/10 | Coursework: Embedded Systems, DSP, ML, Computer Networks, Microprocessors, DSA

Higher Secondary (12th) — Science

Andaram Fulbari Haridham High School

2020 – 2022

Tufanang, India

Grade: 82% | Physics, Chemistry, Mathematics

Key Projects

Smart Greenhouse IoT System

Automated monitoring with ESP32, DHT22, soil sensors, Firebase & Android dashboard with real-time alerts.

Autonomous drone with PID stabilization, obstacle avoidance & ML-based path planning on microcontroller.

Smart Energy Monitor

Real-time energy monitoring with ML-based consumption prediction using ARIMA/LSTM & cost optimization.

Industrial equipment monitoring with vibration analysis & anomaly detection using edge AI on ESP32.

AI-Powered Drone Navigation

Predictive Maintenance System

Technical Skills

Hardware & Embedded ESP32, Arduino, Sensors, PID Control, PCB Design

Backend & Database Firebase, Supabase, Node.js, MQTT

Mobile & Frontend Kotlin Android, React/Next.js, Tailwind CSS

ML & Data Science Python, TensorFlow, ARIMA/LSTM, TFLite

Tools & Design Blender, FreeCAD, 3D Printing, Git, Linux, VS Code, Vercel

Certifications

- 3D Printing & Digital Design — CGEC
- TensorFlow Developer — Google
- IoT Specialization — Coursera

2024

2024

2024

- Android Dev with Kotlin — Google

2023

- Embedded Systems — NPTEL

2023