Md. Saiam Bin Islam

Hardware Product Development Expert

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Professional Summary

High-performance Electromechanical R&D Engineer with 10+ years of hands-on experience in hardware prototyping and system architecture. Expert in bridging mechanical design (CAD), electronics (IoT/Embedded), and digital fabrication to deliver production-ready systems.

Core Technical Skills

Mechanical	SolidWorks (CSWA), DFM, 3D Printing (FDM/SLA/Custom Building), CNC Milling, Wire EDM, 100W CO2 Laser Cutting, Sheet Metal, Lathe.
Electronics	8-Layer PCB Design, Low Power Application, Battery and Power Management, Reverse Engineering, LoRa, GPS, High-Sensitivity Sensors, SMT.
Automation	Python, Embedded C++ (STM32, ESP32, Arduino), Raspberry Pi, Sensor integration, Image Processing, Basic AI and ML.

Professional Experience

2022–Present **Lead R&D Engineer**, *Technowren*, Rajshahi

- **Product Development (Cricket LED System):** Engineered low-power sensing for bails/stamps. Designed 30mm PCBs with 555-timer logic, achieving 5+ days battery life.
- **Robotics & Actuation:** Architected a stair-climbing vacuum robot with 100kg-cm worm-drive actuators and LIDAR for autonomous navigation.
- **Scientific Instrumentation:** Designed a concentric microwave scanning gantry with 360° rotation using high-frequency slip rings and RPi/CNC automation.
- **Industrial Design:** Developed a Digital Oedometer for 200kg loads with 0.1mm accuracy, reducing production costs by 60%.

2022–2023 **Senior Electronics Engineer**, *Metrosemi*

- **Reverse Engineering:** Duplicated and optimized ISA Card PCBs and Laser Triangulation Controllers for semiconductor wafer measurement machines.
- **Technical Leadership:** Managed a 6-person multidisciplinary team across China-based manufacturing and USA-based validation phases.

2021–2021 **Hardware Engineer**, *Think Ltd.*

- **High-Reliability Hardware:** Designed a military-grade 8-layer PCB for 10km long-range communication using STM32F411, LoRa, and GPS.

Selected Publications

2021 **Design and Implementation of a CoreXY CNC Milling Machine for PCB Manufacturing Application** | *14th International Conference on Mechanical Engineering (ICME), BUET*

2021 **A compact design of affordable multipurpose CNC laser engraver** | *International Conference on Automation, Control and Mechatronics for Industry 4.0 (ACMI)*

Education

2013–Present **B.Sc. in Mechanical Engineering**, *RUET*, Rajshahi, Expected Graduation: 2027