

HAZRIEN BIN NAZMAN

Technical Product Manager - IoT & Payments

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PROFILE

Technical product manager and IoT engineer with 5 years of experience in connected products and payments. Took NIoTMS from concept to launch and now own it as product owner, serving 300+ machines for 20+ clients. Lead a 6-person development team while personally delivering all hardware and firmware, so product decisions are grounded in what the systems can actually deliver.

WORK EXPERIENCE

Product Manager & IoT/Backend Developer

01/2025 – present | Kelana Jaya, Selangor

T05 Technologies Sdn Bhd 

- Product owner of the Nebula IoT Management System (NIoTMS), managing 300+ machines for 20+ clients; lead a 6-person team of direct reports (3 backend, 3 frontend), and personally deliver all PCB and firmware work.
- Product revenue from Nebula and other launches moved T05's Malaysian entity from Singapore parent-company funding to self-funded operations.
- Work directly with clients, merchants, management and hardware suppliers to gather requirements, scope MVPs and plan releases.
- Plan and assign work with Gantt charts, run delivery in sprints on Basecamp, and track team progress; maintain product specs and documentation in Notion.
- Own a portfolio of five products (NebulaMQTT, NebulaMQTT V2, Yallvend, T05 Helmet Washer and Synapse Coin SIM) from client request through release and support.
- Led delivery of NebulaMQTT V2 in response to client demand for cash and QR payment on RS232 vending machines; directed firmware, backend and portal work.
- Contributed to Payrallel , a payment orchestration platform supporting 37 payment methods for 373 merchants and 2,760 terminals; owned backend integration of three gateways (UQPAY, Coins.ph, Safaricom).
- Led backend for MARS (merchant vouchers and points on T05Pay- and Payrallel-powered machines) and the T05 Helmet Washer.

IoT Developer & Node.js Backend Engineer, T05 Technologies Sdn Bhd

02/2023 – 12/2024 | Kelana Jaya, Selangor

- Led NIoTMS from concept to launch over about 6 months of R&D, defining the MVP: login and registration, user and merchant management, device registration and initialisation, and remote credit over MQTT.
- Architected NIoTMS device integration and backend API, the foundation of the current platform.
- Designed the NebulaMQTT PCB, cutting production cost by 20%.
- Led R&D on NebulaMQTT, improving device connectivity and performance by 30%.
- Built the backend of the 1SEA super app (Node.js, MongoDB; Android and iOS).
- Ran technical support for deployed IoT products, resolving 95% of issues within 24 hours.

IoT Trainer and Technical IoT Developer

09/2021 – 01/2023 | Shah Alam, Selangor

Myinvent Technologies Sdn Bhd 

- Worked directly with clients to scope and deliver custom IoT solutions.
- Designed and delivered IoT training for 100+ students; 90% post-course satisfaction across 50+ mentees.
- Built course materials that raised completion rates by 20%.

FREELANCE & CONSULTING

IoT Firmware Consultant, Gadang Works Sdn. Bhd

11/2024 – 02/2025

- Advised on an ESP32 (ESP-IDF) indoor air quality monitor with 5 sensors: CO₂, temperature, humidity, PM2.5 and formaldehyde.
- Delivered the alerting and data pipeline: Node-RED, Telegram bot notifications and Google Sheets logging.

IoT Project Mentor, SM Sains Kuala Selangor

01/2023 – 11/2023

Mentored a team of 5 students building FLORIMS 

- ([!\[\]\(c64430f1e66d19baf07a1d1b71e01e82_img.jpg\)](https://ipitex.nrct.go.th/index.php/international/project_detail/0608000879)), an ESP32-based flash flood and rainfall intensity monitor that alerts users through a Telegram bot when rainfall reaches dangerous levels.
- Guided development with Arduino IDE, Node-RED and Telegram bot integration.
- The team won a **Silver Medal at IPITeX 2024** (Thailand Inventors' Day), competing against degree, master's and PhD entrants.

PROJECTS

- Nebula IoT Management System (NIoTMS) - <https://nebula.payrallel.io/>** 04/2023 – Present
Product Owner and Lead Developer for Hardware, Firmware, Backend and Frontend
Turns unattended machines into connected devices with payment and sales tracking. Owns the product across hardware, firmware, backend and frontend; real-time monitoring and remote management of 300+ machines for 20+ clients.
- Payrallel - <https://payrallel.io/> , Backend Developer** 03/2025 – Present
Payment orchestration platform serving 373 merchants and 2,760 payment terminals, with 15 payment gateways and up to 37 payment methods. Integrated the UQPAY, Coins.ph and Safaricom gateways (MERN stack, DigitalOcean App Platform).
- 1SEA MARS - <https://mars.payrallel.io/>, Lead Backend Developer** 10/2024 – 01/2025
Lets merchants issue vouchers and points that customers redeem on T05Pay-powered and Payrallel-powered vending machines, including Nebula devices

PERSONAL PROJECTS

- ESP32-P4 Desk Companion, ESP32-P4 + ESP32-C6, built-in display** 05/2026
• Device serving as media remote for Nuvio Desktop, PC shortcut pad, Aniimo dex, and live Palworld minimap, with Python bridge services on the PC.
- Self-Hosted Homelab, Proxmox** 2024
• Two-node Proxmox cluster over Tailscale running Jellyfin, Home Assistant, OpenMediaVault and Nextcloud.

CORE COMPETENCIES

- **Product:** Product ownership, MVP scoping, roadmap and prioritisation, sprint delivery, requirements gathering, stakeholder management (clients, merchants, management, suppliers), team leadership
- **Tools:** Basecamp, Gantt charts, Notion, GitLab
- **Domain:** Unattended vending and payment machines, cashless and QR payment, payment orchestration and gateway integration, device fleet management, loyalty and voucher systems
- **Technical:** ESP32 / ESP-IDF (C), PCB design (KiCad), MQTT / EMQX, Node.js, Express, MongoDB, Docker, Python, Node-RED, React / Next.js, DigitalOcean
- **Currently learning:** Rust (embedded, for ESP32-P4 GUI development)

EDUCATION

- Bachelor of Engineering (Hons) Electronic Engineering** 09/2017 – 07/2020 | Shah Alam, Malaysia
Universiti Teknologi MARA
- Diploma in Electrical Engineering (Electronic), Universiti Teknologi MARA** 07/2014 – 09/2016 | Dungun, Malaysia

CERTIFICATES

- **Test-first - Drive Clean Code with Automated Unit Tests:** Udemy, Sep 2024
- **MyReskills IoT Program: Agriculture and Farming Industrial Revolution (I.R 4.0)**
- **Network Security & Database Vulnerabilities:** IBM, Oct 2020

REFERENCES

- Cayrin Ngo Xing Yee, HR,** T05 Technologies Sdn Bhd
01116161446
- Nelson Goh Seng Yip, Technical Lead Developer,** T05 Technologies Sdn Bhd
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