DOST MUHAMMAD **SHAH**

Chief Technology Officer | Systems Architect | Energy & IoT Platforms
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SUMMARY

Technology leader and systems architect with **16 years** of shipping connected products across hardware, firmware, cloud and AI. As CTO of Taqamate, an AI-based energy optimisation platform for commercial buildings live across Oman, owns the technology strategy, the platform architecture and the engineering team. Hands-on in every layer: boards and firmware taken to volume production, edge appliances, cloud platforms and machine learning in production. Leads by settling the hard architecture decisions early, holding a high bar on security and reliability, and building teams that own their work end to end. A few advisory engagements a year: architecture reviews, technical due diligence and build-vs-buy decisions.

EXPERIENCE

Chief Technology Officer Mar 2026 - Present
Taqamate – Muscat, Oman

- Responsible for the technology vision, architecture and delivery of an AI-based energy optimisation platform for commercial buildings.
- Set the technical direction: a secure edge-to-cloud platform designed for the field, from on-site appliances to a multi-tenant cloud and the data the AI runs on.
- Own security, reliability and fleet operations, so a platform that controls live buildings can be trusted.
- Turn building data into verified savings: automated fault detection and measurement against proper baselines, so customers see proof rather than estimates.
- Took the platform from first pilot to live operation across commercial buildings and hotels in Oman.
- Lead engineering: architecture decisions, technical standards and the roadmap, from hardware to AI.

Director of Design & Development, Electronics & IoT Jan 2017 - Mar 2026 (9 years)
KINDOWS Tech Solutions – Seeb, Muscat Governorate, Oman

- Led hardware, firmware, cloud and manufacturing as one R&D organisation, with no handoffs.
- Architected the company's IoT cloud platform: device management, telemetry, provisioning and zero-downtime OTA, behind thousands of deployed devices.
- Shipped a smart home and building gateway (Wi-Fi mesh, multi-room audio, face recognition) through bring-up, DFM and NPI to volume production.
- Integrated optical sensors and vision systems (face recognition, ANPR) into smart parking, access control and attendance products.
- Built and mentored the in-house Zigbee firmware team, including custom algorithms for dense-device networks.

Lead Hardware/Embedded Systems Engineer Feb 2013 - Dec 2016 (3 years 11 months)
KINDOWS Tech Solutions – Seeb, Muscat Governorate, Oman

- Took complex PCB and firmware designs through bring-up, DFM and NPI into volume production.
- Delivered a smart home and building gateway with integrated networking and real-time device control.
- Developed custom Zigbee firmware and protocol optimisations, plus 4G and embedded Linux edge connectivity.
- Integrated smart vision cameras and ANPR into parking, access control and attendance systems.

Hardware/Embedded Systems Engineer Feb 2010 - Jan 2013 (3 years)
KINDOWS Tech Solutions – Seeb, Muscat Governorate, Oman

- Designed the first smart home product line: schematic, PCB layout and firmware integration.
- Built the core components of the company's IoT cloud platform.

SKILLS

- **Across every layer:** technology strategy, solution and systems architecture, security by design, engineering standards and roadmaps, team building and mentoring, vendor and supply-chain management, delivery
- **AI / ML:** ML integration into production platforms, training-data pipelines, fault detection and diagnostics (ASHRAE Guideline 36), statistical baselines and M&V (IPMVP), optimisation with guardrails
- **Cloud & data:** PostgreSQL, TimescaleDB, Node.js / NestJS, TypeScript, Azure, AWS, infrastructure as code (Bicep), CI/CD (GitHub Actions), OpenTelemetry, multi-tenant SaaS
- **Edge:** embedded Linux (Debian, Yocto, Buildroot, OpenWrt), hardened appliance images, SQLite historians, OTA updates and fleet management, 4G modules
- **Connectivity:** BACnet/IP, BMS integration, M-Bus, LoRaWAN, Zigbee, BLE, Thread, MQTT/TLS, EMQX, CoAP, REST, WebSockets, TCP/UDP, ONVIF, SIP
- **Hardware:** schematic capture and PCB layout (Altium Designer, KiCad, Eagle), C/C++ firmware, FreeRTOS, bring-up and debug, DFM and NPI, mass production
- **Programming:** C, C++, TypeScript / JavaScript, Python, Java, Kotlin, Dart, PHP, SQL
- **Other:** computer vision integration (smart cameras, ANPR, face recognition), Android / NDK, Google Smart Home, Jira, Scrum

EDUCATION

University of Engineering & Technology, Peshawar

- Bachelor of Engineering (BE), Electronics Engineering | 2005 - 2009
- Languages: English, Urdu, Arabic, Pashto