

Professional Summary

Senior **Industry 4.0 & Digital Factory** leader and **IoT Solution Architect** delivering end-to-end **IIoT**, **edge**, and **IT/OT convergence** solutions from presales and solution design through implementation and post-deployment support. I design scalable, secure digital architectures that integrate **PLCs/SCADA/MES** with analytics platforms to enable **predictive maintenance**, **OEE** improvement, **energy optimisation**, and real-time insights. Well-versed in translating business goals into executable roadmaps and measurable outcomes, I build practical, deployable, and innovative solutions across embedded systems, machine vision, data processing, and product design. Passionate about advancing **AI in manufacturing** to create future-ready, intelligent, and agile factories.

Experience

- 2023–Present **Senior Industrial IoT Applications Consultant & Solutions Architect, CAD-IT UK**
- **System & Architecture Design:** Defined **IIoT** reference architectures, onboarding playbooks, and **ISA-95** data models; established standards for **IT/OT** connectivity and vendor integration.
 - **Data Strategy & Analytics:** Designed pipelines to normalise **OPC UA/MQTT/Modbus** telemetry and integrated historians/time-series data into **Siemens Insights Hub**, enabling **predictive maintenance**, **OEE**, and quality insights.
 - **Scalability & Performance:** Built containerised **edge gateways** and services (**Docker, Node-RED, Python**) for real-time, high-performance industrial data acquisition and analytics across **hundreds of assets**.
 - **Collaboration & Leadership:** Coordinated production, IT, maintenance, and vendor teams; ran discovery workshops and adoption programmes; produced solution documentation and facilitated knowledge transfer.
 - **Strategic Partnership:** Delivered an **IIoT factory** solution for a **global aerospace manufacturer**, enabling secure **IT/OT convergence**, real-time analytics, and digital transformation in a complex manufacturing environment.
 - **Security & Resilience:** Applied **IEC 62443** and **ISO 27001**-aligned principles for data segregation, access control, and risk-aware monitoring.
- 2022–2023 **IT Solutions Technical Analyst, Bristol Water**
- **Automation & Process Optimisation:** Designed and deployed **RPA** bots to streamline workflows and reduce manual effort across functions.
 - **Data-Driven Decision Support:** Prototyped AI-enabled tools and IoT monitoring solutions, accelerating operational insights.
 - **Innovation & Experimentation:** Produced proof-of-concepts (PoCs) to validate feasibility and value; documented outcomes and facilitated handovers to business stakeholders.
- 2018–2021 **Technology Associate, OneDot Automation**
- **Product Development & IP:** Invented and prototyped a patented **wireless in-wall smart-home controller**; delivered privacy-focused automation (**Node-RED/Node.js/openHAB**).
 - **Real-time Tracking:** Engineered a real-time asset/staff tracking solution, integrating IPS with **ESP32 (Embedded C++)** for reliable location telemetry.
 - **Medical Imaging AI:** Deployed a cloud **U-Net** pipeline on **Google Cloud Platform** for chest X-ray GGO detection; packaged inference for scalable use.
- 2019–2022 **Lecturer (Part-time), University of the West of England**
- **Teaching & Labs:** Taught **Computer Vision** fundamentals and led hands-on **MATLAB** labs; created practical exercises that connected theory to real-world problem-solving.

Education

- 2021–2023 **MPhil. Research in Machine Vision, University of the West of England**
Thesis: *3D Printed Object Authentication using Micro and Macro Surface Textures and Geometric*
- 2016–2018 **MSc. Robotics, University of Bristol**
Final Project: *Indoor Localisation System using Low Power Bluetooth*
- 2013–2016 **BEng. (Hons) Electronics, Anglia Ruskin University (Cambridge Campus)**

Career Highlights & Certifications

- Led a smart-factory digital transformation for a FTSE 250, multi-site UK retailer as part of a Continuous Improvement (CI) programme; deployed **OEE** across multiple lines to drive operational excellence.
- Scaled **IIoT** to **350+** assets, enabling real-time insights, remote monitoring, and diagnostics, contributing to cost savings of **£3M+**.
- Delivered **IIoT factory** deployment for a **global aerospace manufacturer**, enabling secure **IT/OT convergence**, advanced analytics, and digital transformation outcomes.
- Delivered end-to-end **Siemens Insights Hub** deployments (architecture, edge acquisition, analytics, **KPI dashboards**) across diverse manufacturing environments.
- Certified Associate: **Siemens Insights Hub** Presales, Service, and Customer Success.
- Patent holder: **Wireless in-wall smart-home controller** (IoT product design).
- Pursuing (self-study): **AWS Solutions Architect & TOGAF**.

Key Skills

IT/OT Solution Architecture

Design reference architectures and roadmaps for plant-to-enterprise integration (MES, SCADA, PLCs ↔ ERP/Cloud) aligned to **ISA-95**.

Smart Manufacturing & CI

Define use cases and deliver value realisation for **OEE** improvement, **predictive maintenance**, **quality analytics**, and **energy optimisation**.

Operations Integration

MES/SCADA/PLC data modelling and interoperability; **historian** integration; standards-based connectivity.

Data Strategy, Analytics & AI

Apply **ML & computer vision** for anomaly/predictive quality and edge inference; enable data-driven decisions at scale.

Stakeholder Leadership & Collaboration

Lead cross-functional teams; run workshops, **RFIs/RFPs**, and adoption programmes to align technology with business goals.

Delivery Excellence

Drive rollouts through **documentation**, knowledge transfer, **hypercare**, and post-deployment support for long-term stability.

Security & Standards

Working knowledge of **IEC 62443** and **ISO 27001** (risk-aware, security-by-design principles).

Technical Skills

Platforms & Cloud

Siemens Insights Hub; **Google Cloud** (Compute/Storage/AI/ML); Azure IoT (IoT Hub/Edge — exposure/PoCs).

Edge & Integration

Edge gateways; **Docker**; **Node-RED**; RESTful APIs; webhook integrations; **OPC UA** clients/servers; **MQTT** brokers.

Industrial Connectivity

OPC UA, **MQTT**, **Modbus**, **PROFINET**, **Ethernet/IP**; PLC/DCS interfacing and OT data acquisition.

Databases & Storage

SQL (relational); time-series/**historians**; cloud object storage; embedded DBs (e.g. SQLite).

Programming & ML

Python; **SQL**; **Node.js/Node-RED**; **MATLAB**; **Embedded C++**; **TensorFlow**, **Keras**, **PyTorch**; **pandas**, **NumPy**, **scikit-learn**.

Computer Vision

OpenCV; **scikit-image**; classical & deep CV pipelines; image pre-/post-processing.

Data Engineering

Python ETL; batch/stream processing; schemas & serialisation (**JSON**, **CSV**, **Parquet**); data validation & QC.

Observability & Dev Practices

Git; logging/telemetry; API testing; container build workflows; basic CI pipelines.

Visualisation

Custom dashboards; KPI & time-series charting; **matplotlib**; **Plotly**.