Ankit Seal

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Professional Summary

Senior **IoT Solution Architect** for **Industry 4.0** delivering end-to-end **IIoT**, **edge**, and **IT/OT convergence** from **presales** and solution design through delivery, **services & governance**, and **customer success**. I lead technical qualification and **bid/tender**/**RFP** responses, craft win-themes and **SoW**s, and present tailored **demos/PoCs** to ops leaders and **CxO**s. I design scalable architectures integrating **PLCs/SCADA/MES** with analytics platforms, normalising **OPC UA**/**MQTT**/**Modbus** for **OEE**, **predictive maintenance**, and quality insights. I establish **SLA/OLA** and **MTTR** targets, and ensure reliable handovers with runbooks; post-deployment, I drive adoption via success plans, training, and renewals/expansion to maximise **ARR** and measurable outcomes.

Experience

2023–Present   **Senior Industrial IoT Applications Consultant & Solutions Architect**, *CAD-IT UK*

- **Presales & Solution Consulting:** Led technical qualification and discovery; authored multiple successful **bids/tender** and **RFP** responses; produced **SoW**s, effort/cost estimates, and **ROI** models; designed and presented tailored **demos/PoCs** to operations leadership and **CxO** stakeholders, driving solution confidence and buy-in.
- **Qualification & Discovery:** Ran stakeholder workshops to capture requirements, map current-state processes, and prioritise value cases; translated business goals into measurable success criteria and a delivery roadmap.
- **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**.
- **Services & Governance:** Defined **SLA/OLA** metrics (availability, **MTTR**) for **IIoT** services; chaired change-advisory review as an SME consultant.
- **Delivery & Change Management:** Coordinated production, IT, maintenance, and vendor teams to execute the plan; maintained solution documentation, **runbooks**, and handover packs; facilitated knowledge transfer, cutover activities, and hypercare; aligned service **SLA/OLA** expectations with operations.
- **Customer Success & Value Realisation:** Built success plans with executives; tracked adoption and value KPIs; ran roadmap review meetings; delivered training and enablement; managed renewals and expansion opportunities to maximise **ARR** and long-term outcomes.
- **Strategic Partnership & Outcomes:** 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.

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).

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	Facilitate cross-functional agreement on **vision**, **scope**, and **priorities**; lead workshops, manage risks/issues, and unblock delivery via data-driven decisions and structured **governance**.
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.
Web & API	Lightweight web apps (**HTML**/JavaScript); back-end services in **Node.js**/**Python**; REST/JSON APIs & SDKs; API tooling with **Curl**/**Postman**; documentation & test collections.
Identity & Access	**JWT**-based service auth; role-based access across edge/cloud **SSO** implementation.
Industrial Connectivity	**OPC UA**, **MQTT**, **Modbus**, PROFINET, Ethernet/IP; PLC/DCS interfacing and OT data acquisition.
Databases & Storage	**MongoDB**; **RAG** storage solution - vectorDB; 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 - **Grafana**, **PowerBI**; KPI & time-series charting; **Apache echarts**.