



Industrial AI Implementation Hands-On

Using Edge AI Systems and AI Studio for Legacy Equipment

3-DAY INTENSIVE HANDS-ON PROGRAMME

INDUSTRIAL AI · EDGE AI · AI STUDIO

Programme Overview

What It Is

A 3-day intensive hands-on programme introducing participants to practical Industrial AI implementation using Edge AI systems, AI Studio, and legacy equipment data capture methods — focused on manufacturing and industrial environments where equipment may not be fully connected or digitally integrated.

What This Programme Covers

Participants will learn how Industrial AI differs from general AI, how Edge AI supports real-time operational intelligence, how legacy equipment data can be captured through OCR and connectivity methods, and how AI Studio supports dataset preparation, model development, deployment and lifecycle management.

Who Should Attend

Electrical, electronics, automation, manufacturing, process, equipment, maintenance and industrial engineers; software developers supporting industrial systems; digital transformation teams; smart manufacturing project teams; and technical professionals involved in Industry 4.0, automation, AI or operational improvement initiatives.

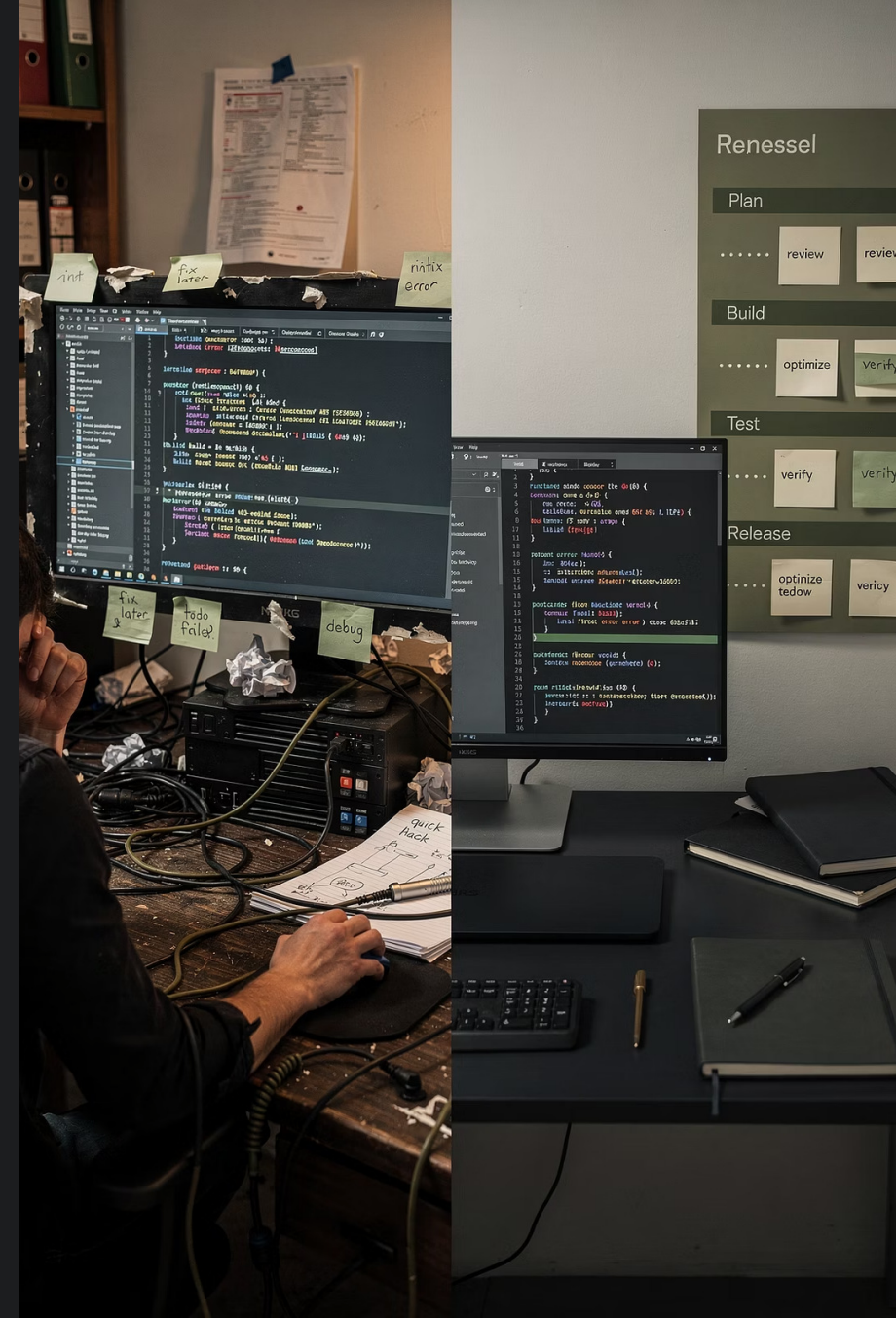
Recommended Background & Programme Duration

Recommended Participant Background

- Basic understanding of manufacturing or industrial operations
- Familiarity with equipment, production, maintenance, quality or engineering workflows
- Basic exposure to digital tools, automation, data, programming or system integration
- No prior AI development experience required

Programme Duration

- Training days: **3 days**
- Learning hours per day: **7 hours**
- Total learning hours: **21 hours**



Programme Learning Outcomes

Participants will leave with 12 practical, future-ready competencies spanning Industrial AI, Edge AI systems and legacy equipment data implementation.

#	Competency	Description
1	AI Concepts Clarity	Explain the differences between AI, Machine Learning, Deep Learning, Predictive AI, Generative AI, LLMs, Agentic AI, Industrial AI and Edge AI.
2	Industrial AI Applications	Describe how Industrial AI is applied in manufacturing, equipment, process, quality, energy and maintenance environments.
3	Edge AI Architecture	Explain the architecture of an Industrial Edge AI platform, including application, integration, platform and edge system layers.
4	Legacy Data Capture	Identify suitable data capture methods for legacy equipment, including OCR, IoT, API, SECS/GEM and CIM integration.
5	AI Studio Proficiency	Understand how AI Studio supports dataset preparation, model training, experimentation, deployment and lifecycle management.
6	Use Case Identification	Identify suitable Industrial AI applications such as OCR for legacy equipment, vision inspection, OEE analytics, alarm management, energy monitoring and process optimisation.
7	Implementation Concept Design	Design a basic Industrial AI implementation concept for legacy equipment or industrial operations.
8	Data Flow Mapping	Map data flow from equipment or machine source to AI model, application output and operational decision-making.
9	Prototype Demonstration	Demonstrate a guided AI workflow or semi-working prototype using selected industrial AI use cases.
10	Deployment Considerations	Identify deployment, security, operational and maintenance considerations for Edge AI implementation.
11	Implementation Roadmap	Prepare a practical roadmap for pilot deployment or further development.

Day 1: AI Foundations, Industrial Edge AI Architecture and Legacy Equipment Data Capture

Day Learning Objective: Participants will understand key AI concepts, how Industrial AI and Edge AI apply to manufacturing environments, and how data can be captured from legacy equipment for AI implementation.

7 hours of structured learning

Time	Topic
9:00 AM – 10:00 AM	Topic 1: Introduction to AI, Industrial AI and Edge AI Applications
10:00 AM – 12:00 PM	Topic 2: Industrial Edge AI Platform Architecture
12:00 PM – 1:00 PM	Topic 3: Legacy Equipment Data Capture Methods
1:00 PM – 2:00 PM	LUNCH
2:00 PM – 3:30 PM	Topic 4: OCR, IoT, API, SECS/GEM and CIM Integration Overview
3:30 PM – 5:00 PM	Topic 5: Industrial AI Use Case Selection and Data Flow Mapping

Day 1 Topic Details

Topic	Topic Description	Topic Objectives	Learning Outcomes	Duration
Topic 1: Introduction to AI, Industrial AI and Edge AI Applications	Provides a concise introduction to key AI concepts. Explains differences between AI, ML, Deep Learning, Predictive AI, Generative AI, LLMs, Agentic AI, Industrial AI and Edge AI. Connects these to practical industrial applications such as visual inspection, OCR, predictive maintenance, production analytics, alarm management, energy monitoring and process optimisation.	Build a common understanding of AI terminology and explain how different AI types are used in industrial and manufacturing environments.	Explain differences between AI, ML, Deep Learning, Predictive AI, Generative AI, LLMs and Agentic AI; describe Industrial AI; explain why Edge AI is useful for real-time equipment-level deployment; relate AI types to industrial use cases.	1.0 hour
Topic 2: Industrial Edge AI Platform Architecture	Introduces the overall architecture of an Industrial Edge AI platform. Participants learn how applications, integration layers, AI Studio, AI Model-as-a-Service, Falcon S1 Edge AI systems and edge/cloud deployment concepts work together to support operational intelligence.	Help participants understand the architecture and building blocks required to deploy AI within industrial operations.	Describe the main layers of an Industrial Edge AI platform; explain the role of Edge AI systems; identify application and integration layers; map how machine or operational data flows into AI-enabled applications.	2.0 hours
Topic 3: Legacy Equipment Data Capture Methods	Focuses on the challenge of capturing data from legacy equipment without modern digital connectivity. Explores approaches such as OCR, camera-based reading, IoT sensors, manual input, file-based data capture and gateway-based connectivity.	Introduce practical methods for acquiring usable data from legacy machines and equipment.	Identify suitable data capture methods for different equipment conditions; explain when OCR is useful; recognise the limitations of legacy equipment data capture.	1.0 hour
Topic 4: OCR, IoT, API, SECS/GEM and CIM Integration Overview	Introduces key industrial integration methods. Participants learn how OCR can digitise machine displays, how IoT sensors collect equipment data, how APIs support system integration, and how SECS/GEM and CIM are used in manufacturing and semiconductor environments.	Provide participants with practical awareness of integration options for industrial AI implementation.	Explain the purpose of OCR, IoT, API, SECS/GEM and CIM; compare different integration approaches; select suitable connectivity options for selected industrial scenarios.	1.5 hours
Topic 5: Industrial AI Use Case Selection and Data Flow Mapping	Guides participants in identifying and selecting practical Industrial AI use cases — including OCR for legacy machine display, vision inspection, OEE monitoring, alarm classification, energy monitoring, recipe management and equipment management. Participants map the data source, AI processing flow, output and decision-making process.	Help participants define a practical AI use case and map the implementation flow from data source to operational output.	Select an Industrial AI use case; define the problem statement; identify required data; map data flow; prepare an initial implementation concept.	1.5 hours

Day 2: AI Studio, Dataset Preparation, Model Development and AI Model-as-a-Service

Day Learning Objective: Participants will understand how AI Studio supports industrial AI development through dataset preparation, model training, experimentation, deployment workflow and lifecycle management.

7 hours of structured learning

Time	Topic
9:00 AM – 11:00 AM	Topic 6: AI Studio for Industrial AI Development
11:00 AM – 1:00 PM	Topic 7: Dataset Preparation and Model Lifecycle Management
1:00 PM – 2:00 PM	LUNCH
2:00 PM – 3:30 PM	Topic 8: AI Model-as-a-Service and API-Based Deployment
3:30 PM – 5:00 PM	Topic 9: Guided Mini-Lab: OCR or Vision AI Workflow

Day 2 Topic Details

Topic	Topic Description	Topic Objectives	Learning Outcomes	Duration
Topic 6: AI Studio for Industrial AI Development	Introduces AI Studio as a platform to build, train and deploy AI models across edge and cloud environments. Participants learn how AI Studio supports model training, experimentation, deployment pipeline and dataset lifecycle management.	Introduce the role of AI Studio in standardising and accelerating industrial AI development.	Explain the function of AI Studio; describe the workflow from project creation to model deployment; identify how AI Studio supports edge and cloud AI implementation.	2.0 hours
Topic 7: Dataset Preparation and Model Lifecycle Management	Covers how industrial datasets are collected, organised, labelled, cleaned, prepared, versioned and maintained for AI development. Focuses especially on OCR and vision-based use cases involving images, machine displays, equipment panels, parts, defects and process conditions.	Help participants understand how dataset quality affects AI model performance and deployment readiness.	Prepare a basic dataset structure; identify labelling requirements; recognise common data quality issues; explain the model lifecycle from data collection to deployment.	2.0 hours
Topic 8: AI Model- and API-Based Deployment	Introduces the concept of using ready-to-deploy AI models through Model-as-a-Service and API integration. Participants learn how prebuilt AI models can reduce development time, lower implementation cost and support scalable deployment across industrial applications.	Explain how prebuilt models and APIs can accelerate Industrial AI adoption.	Explain the MaaS concept; identify when prebuilt models are suitable; describe API-based model deployment; design a simple AI service integration flow.	1.5 hours
Topic 9: Guided Mini-Lab: OCR or Vision AI Workflow	A guided hands-on module walking participants through an OCR or vision-based AI workflow. Participants work with sample images of equipment displays, parts, defects or production conditions to understand image input, detection or recognition, output interpretation and integration concept.	Provide participants with practical exposure to an AI workflow relevant to legacy equipment or industrial inspection.	Demonstrate a basic OCR or vision AI workflow; interpret AI output; explain how the workflow can be applied to equipment monitoring, inspection or data capture.	1.5 hours

Day 3: Industrial AI Applications, Edge Deployment and Hands-On Implementation

Day Learning Objective: Participants will apply the knowledge from Day 1 and Day 2 to design and demonstrate an Industrial AI implementation concept using Edge AI systems, AI Studio and legacy equipment data.

7 hours of structured learning

Time	Topic
9:00 AM – 11:00 AM	Topic 10: Industrial AI Applications for Manufacturing and Operations
11:00 AM – 12:30 PM	Topic 11: Edge AI Deployment and Operational Considerations
12:30 PM – 1:30 PM	LUNCH
1:30 PM – 3:30 PM	Topic 12: Hands-On Industrial AI Implementation Sprint
3:30 PM – 5:00 PM	Topic 13: Demo, Review and Implementation Roadmap

Day 3 Topic Details

Topic	Topic Description	Topic Objectives	Learning Outcomes	Duration
Topic 10: Industrial AI Applications for Manufacturing and Operations	Introduces practical Industrial AI applications including vision inspection, OCR for legacy equipment, production analytics, OEE monitoring, recipe management, equipment management, critical alarm management, thermal management, epoxy dispensing optimisation and energy management.	Help participants understand how AI can be applied across different manufacturing and operational functions.	Identify relevant Industrial AI applications; explain how AI supports operational intelligence; match selected AI technologies to manufacturing use cases.	2.0 hours
Topic 11: Edge AI Deployment and Operational Considerations	Covers practical considerations for deploying AI near equipment or production systems. Topics include edge versus cloud deployment, latency, connectivity, local processing, reliability, cybersecurity, access control, maintenance, monitoring and operational support.	Prepare participants to evaluate deployment feasibility and operational requirements for Edge AI implementation.	Explain the benefits and limitations of Edge AI deployment; identify key operational risks; define basic deployment considerations for industrial environments.	1.5 hours
Topic 12: Hands-On Industrial AI Implementation Sprint	Participants work individually or in teams to design or complete a guided Industrial AI prototype concept. Projects may focus on OCR for legacy equipment, vision inspection, OEE monitoring, alarm classification, energy monitoring, recipe parameter monitoring or equipment management.	Enable participants to apply the implementation flow in a guided project setting.	Define the problem; identify the data source; design the AI workflow; map integration requirements; prepare expected outputs; demonstrate a prototype concept or semi-working workflow.	2.0 hours
Topic 13: Demo, Review and Implementation Roadmap	The final topic allows participants to present their Industrial AI implementation concept or semi-working prototype. Presentations cover the problem statement, selected use case, data source, AI approach, Edge AI deployment concept, risks, limitations and next steps.	Consolidate participant learning and translate the prototype concept into a practical implementation roadmap.	Present an Industrial AI solution concept; justify their approach; identify deployment risks; receive feedback; prepare a roadmap for pilot implementation or further development.	1.5 hours

Implementation Sprint & Programme Summary

Implementation Sprint Requirements

Each participant or team designs and presents a prototype concept covering at least **6 of the following components**: problem statement and use case definition, data source identification, AI workflow design, integration requirements mapping, Edge AI deployment concept, dataset structure outline, expected AI output, OCR or vision AI workflow evidence, operational risk assessment, security considerations, and pilot implementation roadmap.

Evaluation Criteria

#	Criteria	Weight
1	Problem Clarity & Use Case Definition	15%
2	Data Source & AI Workflow Design	15%
3	Edge AI & Integration Approach	15%
4	Prototype or Workflow Demonstration	15%
5	Deployment, Security & Operational Considerations	10%
6	Presentation & Communication	30%
	Total	100%

Programme Promise

This programme prepares participants to become effective Industrial AI implementers who can identify use cases, capture legacy equipment data, design AI workflows, deploy Edge AI solutions and prepare a practical implementation roadmap — with operational awareness and engineering rigour.

- ✔ Participants leave ready to lead or support Industrial AI and Edge AI initiatives in real manufacturing and operational environments.



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