QA

Learn. To Change.

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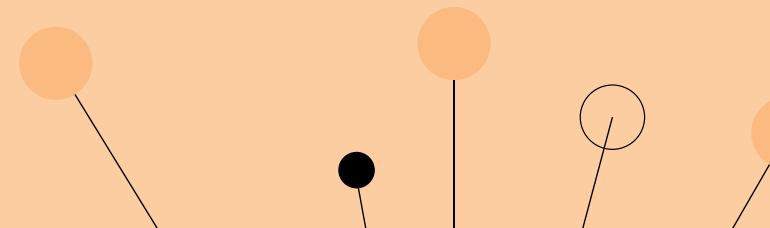
AI Data Specialist

Level 7 Apprenticeship

Programme Guide

Why QA?

Endorsed by 4,000+ global clients, we are the leader in applied and cohort-based learning academies.

Today's biggest technological shifts are shaped by AI, cloud, and data.

In every technology revolution, there are winners and losers – and teams with applied skills make all the difference. We believe you can't change an organisation unless you change the capabilities of its people and ensure human and machine intelligence work together.

Success in numbers:

35+
Years of training experience

1,000+
AI, cloud & coding hands-on labs

40,000+
Careers launched & accelerated

£500M+
Levy spend invested

24 hours
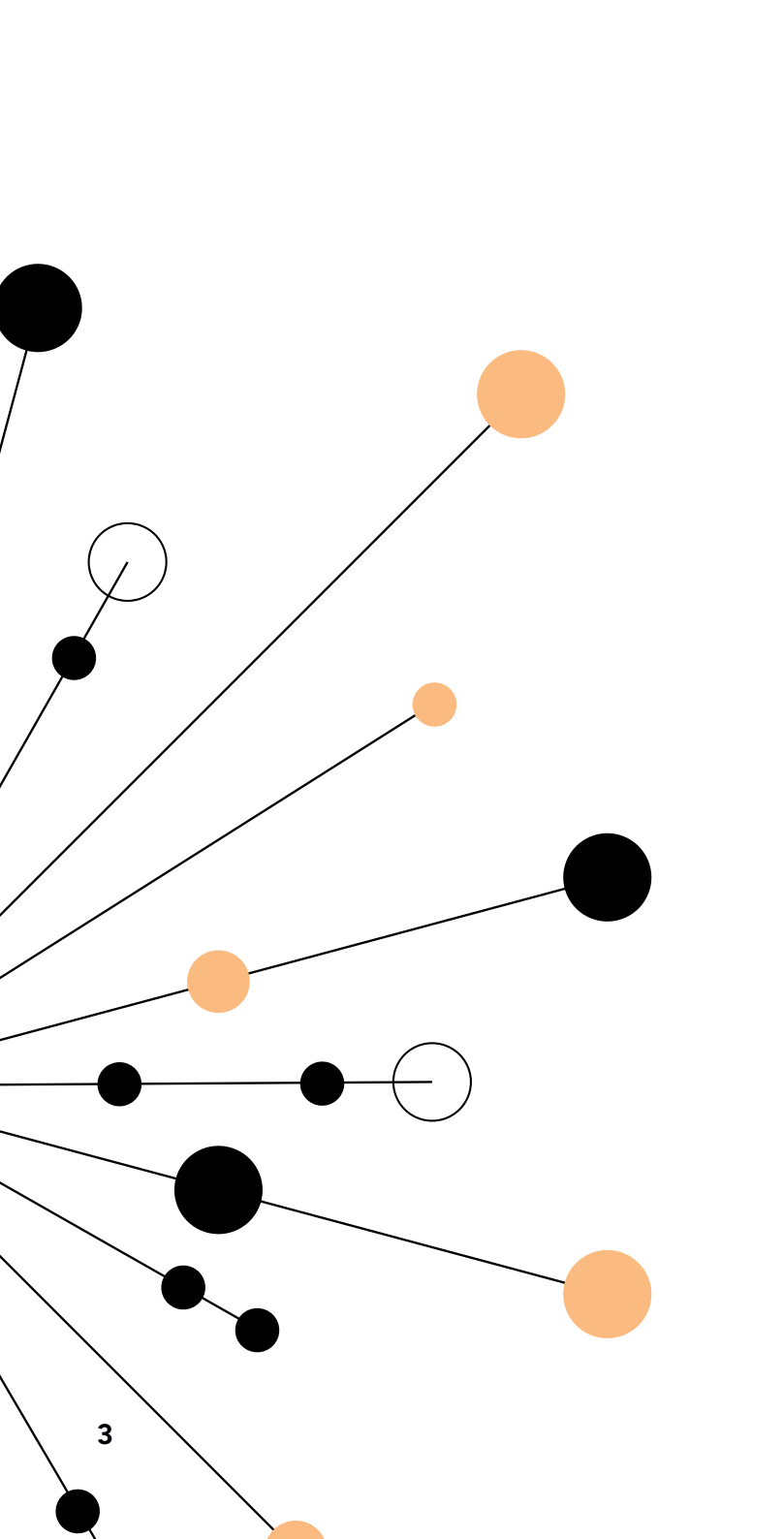Feedback time for submissions

<1 minute
Response time to learner queries

Ready to explore how QA can support you?
Let's dive in!

Contents

Creating Change

AI transforms data into strategic advantage and drives innovation.

This programme equips your organisation with the technical skills to innovate and develop new data-driven AI solutions that automate and optimise business processes, and augment human decision-making.

Our apprenticeships drive business results by empowering organisations to apply skills consistently at speed and scale.

Champion AI

Deliver value through advancing the use of data, ML and AI

Augment decision-making

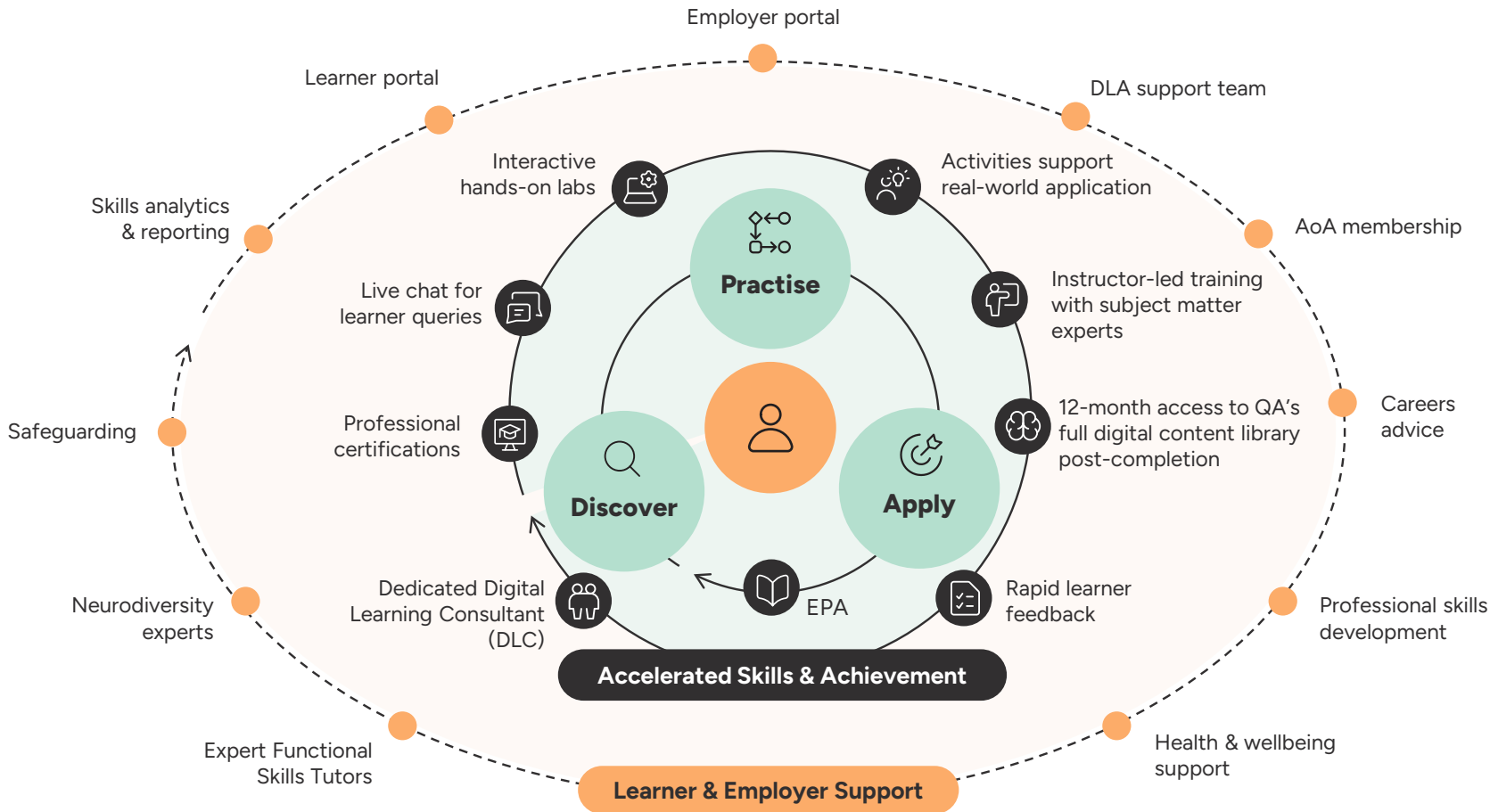Enhance human judgment and decision capabilities

Execute applied research

Develop tailored solutions for business challenges

Digital by Design

Our market-leading approach accelerates skill development and achievement through our **Discover**, **Practise**, **Apply** methodology, ensuring that both learners and employers are fully supported throughout their programme.

Discover

Leveraging QA's learning platform, learners follow a development path focused on their job role.

Practise

Learners come together for instructor-led training sessions, practising their skills through hands-on labs and sandboxes in a safe environment while collaborating with peers.

Apply

These practiced learnings are applied on the job through work-based activities at key and sequenced stages, fully supported and reviewed by the specialist DLC team.

Programme Overview

Details of standard: AI Data Specialist

Total cost: £17,000

Programme duration: 21 months

Live instructor sessions: 17 days

Delivered in collaboration with our strategic vendor partners:

Microsoft Solutions Partner
Microsoft Cloud
Training Services

aws PARTNER Advanced Tier Training

Google Cloud Partner

Experience QA's self-paced learning platform with interactive labs and configurable learning.

| Data Science Principles | AI and Data Science CPD | Programming for AI | ML using Cloud Computing | AI and Digital Innovation | Disruptive Leadership |

Learner Journey

The AI Data Specialist programme integrates live and online workshops with self-paced learning, employing a guided discovery approach for individual learner contexts.

Learners are assigned a Digital Learning Consultant (DLC) for personalised coaching and support. These specialists ensure their successful progress, wellbeing, and readiness for assessments.

ACE Team

Our Academic Community of Excellence (ACE) team support learners with writing styles, reading strategies, referencing, and more.

Modules – 15 months

EPA – 6 months

Module 1: Data Science Principles (10 weeks)

Module 2: AI and Data Science Professional Practice (40 weeks)

Module 3: Programming for Artificial Intelligence (10 weeks)

Module 4: Machine Learning Using Cloud Computing (10 weeks)

Module 5: AI and Digital Innovation (10 weeks)

Module 6: Disruptive Leadership for Sustainable Strategy (10 weeks)

Work-Based Project

Project Report with Presentation

Professional Discussion

Technical Test

IfATE AI7 Qualification Awarded

Modules

Following each module, learners apply their newly acquired knowledge and skills to ongoing work projects.

01

Module 1:
Data Science Principles

Explore foundational data science principles for business and societal advancement, integrating mathematics/statistics, computing, and domain knowledge.

Learn to analyse data assets, create data-driven project ideas that advance organisational knowledge base, and manage implementation effectively.

Topics:

- Introduction to Data Science
- Data Preparation, Analysis & Visualisation
- Core Statistical Concepts & Techniques
- Statistical Tests
- Big Data Technologies & Architectures
- NoSQL Databases
- Ethical, Legal & Governance Aspects
- Machine Learning Algorithms Overview
- Implementing Data-Driven Projects

Live Instructor Sessions: 3 Days
(6 Half-Day Workshops)

02

Module 2:
AI and Data Science Professional Practice

Engage in a CPD programme to develop Python skills for AI and data science, log professional development, and develop ideas for work-based projects.

Topics:

- The AI Data Specialist Professional
- Continuous Professional Development (Alternative CPD Options Available)
- Reflection
- Ethical & Legal Considerations
- Error, Bias & Uncertainty
- Contemporary Issues
- Teamworking
- Understanding Self
- Project Management & Development Methods

Live Instructor Sessions: 2 Days
(4 Half-Day Workshops)

03

Module 3:
Programming for Artificial Intelligence

Covers statistical methods, mathematical foundations, and programming for AI and data science, integrating theory with practical applications to address data challenges.

Topics:

- Regression
- Supervised Learning: Classification Algorithms
- Supervised Learning: Prediction Techniques
- Unsupervised Learning: Clustering; Principal Component Analysis
- Time Series Forecasting
- Visualisation
- Optimisation, Metrics Application & Model Evaluation

Live Instructor Sessions: 3 Days
(6 Half-Day Workshops)

04

Module 4:
Machine Learning Using Cloud Computing

Solve complex machine learning problems with advanced techniques by deploying machine learning networks on the cloud, and evaluate their performance.

Topics:

- Cloud Fundamentals
- Neural Networks & Deep Learning
- Convolutional NNs; Recurrent NNs
- Reinforcement Learning
- Autoencoders & Generative Networks
- Future Innovations & Responsible AI

Live Instructor Sessions: 3 Days
(6 Half-Day Workshops)

↻ **Carousel Model – Modules 2, 3, 4, 5.**

05

Module 5:
AI and Digital Innovation

Explore AI and digital innovation across various industries, focusing on generative AI, LLMs, transformers, and NLP innovations. Experiment with foundation models from third parties.

Topics:

- AI Applications Across Sectors
- Generative AI
- Word Embedding & Latent Representations
- Large Language Models (LLMs)
- Transformer Technology
- Prompt Engineering
- Natural Language Processing (NLP) Innovations
- Ethics & Future Directions

Live Instructor Sessions: 3 Days
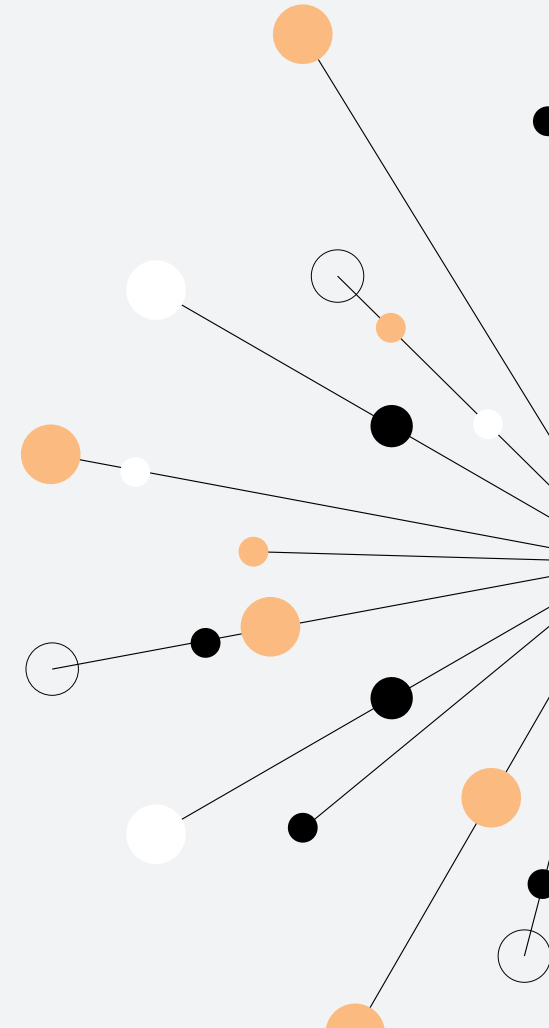(6 Half-Day Workshops)

06

Module 6:
Disruptive Leadership for Sustainable Strategy

Develop a sustainable data strategy to stay at the forefront of technology and translate technical learning into actionable insights for business success and growth.

Topics:

- Business Trends: Digital Transformation & Data
- Data Maturity Models
- Developing Data Strategy: Purpose, Method, Tools
- Optimising Data Operations: Data Ops, ML Ops
- Leadership in a Disruptive Context
- Sustainability & Sustainable Strategy
- Ethical AI: Legal & Social Considerations

Live Instructor Sessions: 3 Days
(6 Half-Day Workshops)

Tools and Technologies

Statistics

- Python
- Excel

Visualisation

- PowerBI
- Excel
- Python

Machine Learning

- Python
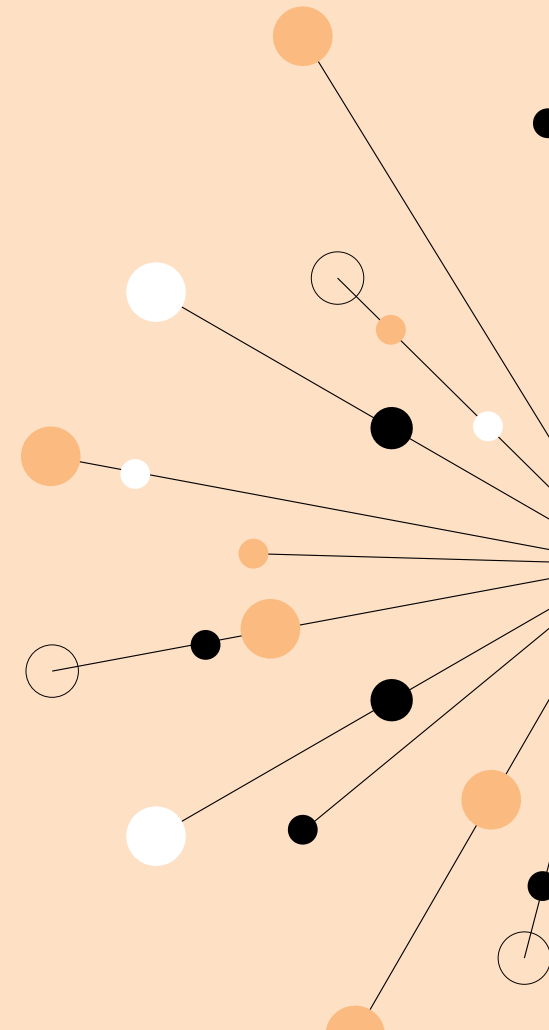- Sklearn
- NLTK
- Tensorflow & Keras

Cloud Services

- AWS
- Azure
- GCP

Foundation Models

- OpenAI
- Hugging Face

Development Environments

- Google Colab
- Anaconda
- Alternative environments available

End-Point-Assessment

We ensure all learners are fully prepared for their End-Point-Assessment (EPA) through our internal gateway process, maximising their success rates.

Assessment criteria:

01

Knowledge
Ability to convey knowledge effectively.

02

Skills
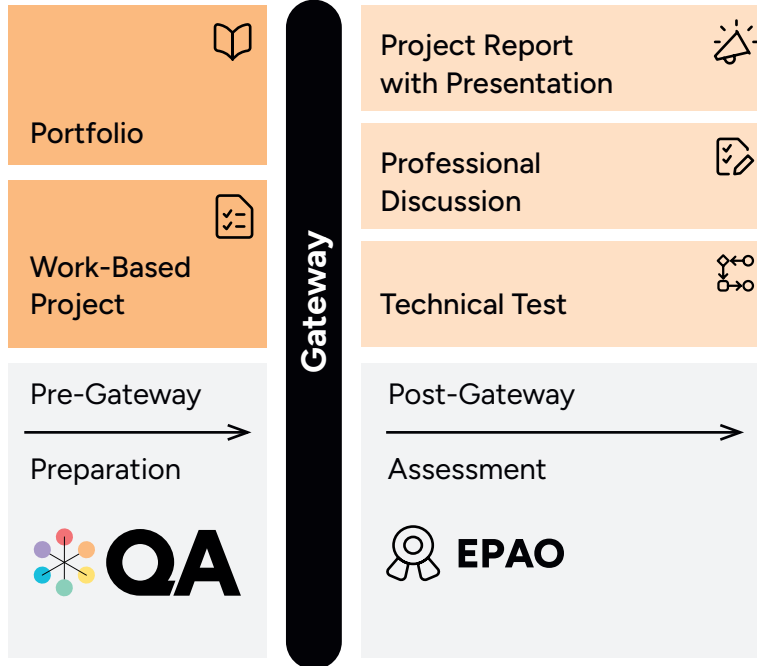Demonstrate practical skills with confidence.

03

Behaviour
Exhibit professional workplace behaviour.

Explore the detailed assessment criteria within the **AI Data Specialist standard.**

EPA process:

Portfolio

Work-Based Project

Pre-Gateway

Preparation

QA

Gateway

Project Report with Presentation

Professional Discussion

Technical Test

Post-Gateway

Assessment

EPAO

Project Report with Presentation:
Prepare a project report, demonstrate achievements and knowledge, and participate in a Q&A.

Professional Discussion:
Engage in a formal two-way conversation to showcase knowledge, skills, and behaviours.

Technical Test:
Answer four scenario-based questions in a closed-book setting to demonstrate technical knowledge.

Ready to partner with us?

Let's talk:

📱 0113 220 7150

💻 qa.com/contact

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Apprenticeships

SKILLS FOR LIFE