Level 6 AI Engineer.*

The Level 6 AI Engineer apprenticeship empowers your organisation to lead in the age of intelligent technology and transform your business with scalable, real-world AI expertise. We equip your employees with the advanced AI and machine learning (ML) capabilities they need to build, deploy and manage intelligent solutions at scale.

Your employees will learn to leverage powerful technologies such as computer vision, natural language processing, and neural networks to solve real-world challenges and unlock new growth. By embedding practical, ethical and forward-thinking AI skills across your workforce, you'll enable smarter problem-solving, deeper insights, and more agile decision-making to drive lasting, transformative impact. This is more than just theory, this is hands-on, future-ready training to deliver immediate business value.

Who's it for?

This apprenticeship is ideal for people who want a comprehensive, hands-on approach to AI and machine learning and are in a role that ensures exposure to the work duties listed in the standard.

To be eligible for this programme, learners must be employed in a relevant role, which could include:

- AI Engineers and ML Practitioners who want to develop the technical skills needed to implement and manage AI/ML solutions. Typical job roles include AI Engineer, Machine Learning Engineer, Deep Learning Engineer
- Software Developers and Data Scientists who want to expand their expertise into AI, ML, and deep learning. Typical job roles include Data Scientist, Software Engineer (AI/ML), AI Application Developer
- IT and Data Professionals who want to build AI-powered solutions. Typical job roles include Data Engineer, AI/ML Data Analyst, AI/ML Operations Engineer (MLOps)
- Technology Leaders who are driving AI initiatives and looking to understand AI strategy, ethics, and implementation. Typical job roles include AI Solutions Architect, AI Product Manager, AI Product Engineer
- Career Switchers and AI Enthusiasts with a foundational understanding of programming and data who want to transition into AI roles. Typical job roles include AI Consultant, Applied AI Specialist, AI Research Engineer

Business impacts

- Solve critical business problems by designing, building, and managing intelligent AI solutions using cutting-edge techniques
- Accelerate innovation and efficiency with AI-driven automation, best practices, and emerging technology – including transformative tools like generative AI (GenAI)
- Build in-house AI expertise with practical skills in data engineering, model deployment, and the ethical, secure operation of AI systems
- Make faster, smarter decisions by transforming complex data into actionable insights that drive performance and align with strategic priorities

Built for performance

- Programmes designed and delivered by industry experts
- Dedicated Performance Coach, qualified in both coaching and their specialist subject area
- Backup from a multidisciplinary performance team
- Market-leading online live learning experience
- 24/7 access to programme materials, enrichment resources, study support and specialist insight via our virtual learning platform
- Mentoring, networking and peer support through BPP Community, including our Student Ambassador Network
- Learning pathways built using a 'stretch and challenge' model by design, meaning each learner is pushed to their maximum abilities
- Progression pathways that can take you from entry level to specialist expert
- Dedicated Functional Skills support if required

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*Subject to approval.

Programme overview.

Apprenticeship standard: Machine Learning Engineer

Cost: £22,000

Duration: 18 months

Entry requirements

As a minimum learners will need to have:

- Level 3 qualification such as A-Levels (or equivalent) in a relevant subject, for example computer science, maths, or applied sciences

For learners that do not have GCSE English and/or maths at grades 9 to 4 (A* to C):

- Learners aged 16-18 years must study and pass Functional Skills English and/or maths as part of the apprenticeship programme
- Learners aged 19 or above on the day they start the programme do not need to study or pass Functional Skills English and/or maths, unless required by their employer

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Prepare for the challenges of tomorrow

Introduction to Sustainability

Self-guided online course (3 hours)

Developed in partnership with xUnlocked and delivered by sustainability experts, this course builds fundamental knowledge on sustainability and sustainable working practices.

- Available to all learners at no extra cost
- Accessible anytime, anywhere via our virtual learning platform
- Self-paced learning to fit into any busy schedule

xUnlocked

AI skills, *for all.*

Embedded AI training modules for every data and tech programme. Empowering every learner to drive AI-centric transformations within their business.

- Available to all learners at no extra cost
- Bespoke to BPP, developed by our expert data scientists
- Self-guided online learning to fit into any busy schedule
- Accessible anytime, anywhere via our virtual learning platform

Generative AI Foundations → Advanced Prompt Engineering → AI Strategy and Business Implementation → AI Tools, Platforms, and Customisation

Knowledge and skills gained

Focusing on practical application of technical and non-technical AI skills, the modules explore AI's capacity to optimise structured interactions, align governance frameworks, and deploy scalable solutions, with a significant focus on ethical considerations and operational efficiency.

- Ability to design and implement complex prompts for diverse use cases
- Understanding and application of HITL techniques and fact-checking principles
- Ability to conduct prompt A/B testing
- Understanding of AI governance frameworks and compliance requirements
- Ability to adapt AI messaging for different stakeholders
- Ability to assess AI ecosystems
- Understanding of API-driven generative AI (GenAI) benefits

Tools

Large language models (LLMs)
(for example Copilot or Google Gemini)

No-code AI automation platforms
(no prior coding knowledge required)

Optional masterclasses

Live online sessions available every month

Example topics include:

- Data Leadership
- Ethical Hacking and Cyber Security
- Discovering and Analysing Market Trends
- Sustainable Technology and Green Computing
- Responsible AI
- Setting AI Strategy
- Emerging Landscapes – AI
- Quantum Computing Fundamentals

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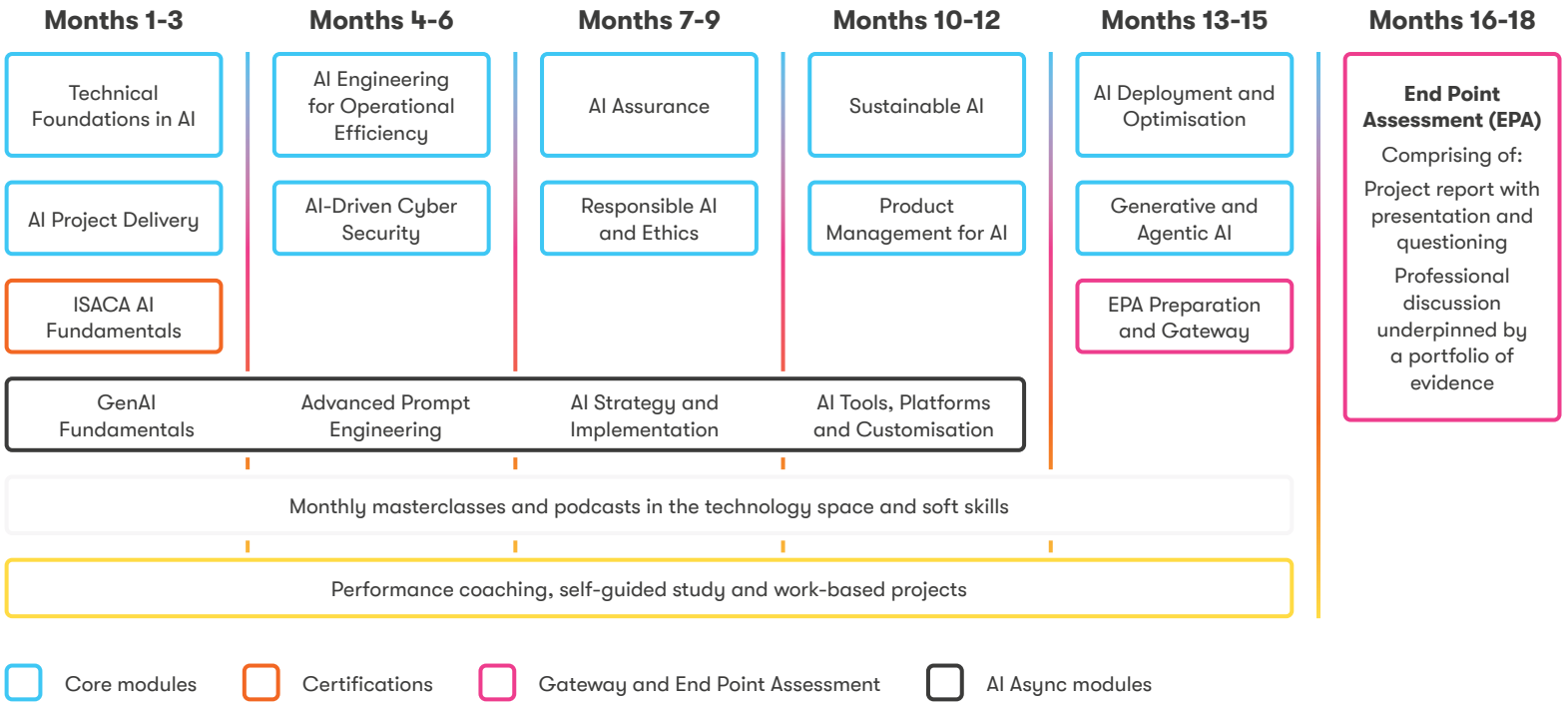
Level 6 AI Engineer.

Study mode

Online weekly: flexible learning that fits busy schedules, with two to three hours of online live lectures and seminars.

18-month programme (inc. EPA)



Apprenticeship standard

Machine Learning Engineer

Delivered by

BPP

Time commitment**

- **15 months** on programme
- **124 hours** *(3 hours per week)* in online live training sessions *(40 sessions in total)*
- **3-4 hours** guided self-study, per module, via our virtual learning platform
- **1 hour** performance coaching session, every month
- **1 hour** progress review, every eight weeks
- **6 hours** per week in off-the-job learning, during working hours
- **1 hour** EPA preparation session
- **3 months** in End Point Assessment

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**On average.

Programme modules.

Technical Foundations in AI

Learners will identify emerging AI technologies, integrate third party solutions, and proactively drive automation initiatives whilst maintaining awareness of latest developments in machine learning and artificial intelligence.

- Machine learning, computer vision, NLP, LLMs and robotics
- Supervised, unsupervised, reinforcement learning
- Ensemble methods
- Programming skills
- Integrated development environments
- Core maths in AI and ML
- AI architectures, platforms and tooling
- Deep learning and neural networks

AI Engineering for Operational Efficiency

Learners will develop and maintain robust data engineering solutions, ensuring quality and efficiency throughout the AI and machine learning pipeline whilst effectively managing model performance and scalability requirements.

- Feature engineering
- Data pre-processing
- Data pipelines
- Infrastructure types
- Datasets and algorithms
- Model scaling and drift

AI Assurance

Learners will develop the skills to evaluate, refine, and monitor AI and machine learning models, ensuring performance, stability, and validity throughout the model life cycle, while mitigating bias and aligning solutions with evolving business needs.

- AI and ML performance metrics
- Model stability
- Software evaluation
- Error and algorithmic bias
- Explainable AI

AI Project Delivery

Learners will develop the skills to manage the complete AI and machine learning life cycle, applying robust methodologies and best practices whilst maintaining comprehensive documentation and change management processes.

- AI and ML life cycle
- Model training, deployment and evaluation
- ML methodologies
- ML quality assurance
- Version control
- Continuous integration and deployment
- Model testing
- Model documentation
- AI and ML professional standards

AI-Driven Cyber Security

Learners will develop the skills to implement secure AI and machine learning solutions by understanding potential threats, incorporating preventative measures, and fostering a robust security culture whilst managing risks across the complete machine learning life cycle.

- Confidentiality, integrity and availability
- Mitigating AI and ML risks
- Cyber security cultures
- Secure by design

Responsible AI and Ethics

Learners will develop the skills to collect, evaluate, analyse and test data to ensure high-quality, effective, and unbiased AI solutions.

- Data collection
- Data quality
- Exploratory data analysis
- Feature engineering
- Data splitting and sampling
- Model training and validation

Programme modules.

Sustainable AI

Learners will develop the skills to prioritise and implement sustainable practices within AI and machine learning engineering, aligning solutions with organisational environmental objectives and driving positive environmental impact.

- Sustainable AI and ML
- Sustainability tools
- Sustainability working practices

AI Deployment and Optimisation

Learners will develop the skills to effectively apply AI and machine learning within an organisational context, aligning technical solutions with strategic objectives, ethical considerations, and evolving business needs, while fostering innovation and informed decision-making.

- ML application
- Translating business needs
- Model deployment
- AI and ML integration tools
- Horizon scanning

Product Management for AI

Learners will develop the essential communication, collaboration, and stakeholder management skills necessary to effectively deliver AI and machine learning solutions within diverse team and organisational contexts, fostering inclusivity and ensuring clear communication throughout the project life cycle.

- Adaptive communication
- Collaboration techniques
- Negotiation and influencing techniques
- Managing expectations

Generative and Agentic AI

Learners will develop the skills to effectively harness the potential of generative and agentic AI within an organisational framework, aligning innovative solutions with business goals, ethical principles, and technological advancements to foster strategic growth and responsible AI practices.

- Generative and agentic AI
- Implementing generative AI (GenAI)
- Integrating agentic AI
- Responsible generative and agentic AI
- Generative AI, creativity and productivity

AI Tools and Competencies

AI tools/platforms used on this programme:

- Modern AI and ML libraries in Python
- Development environments
- Version control and CI/CD tools
- Cloud platforms (SaaS, PaaS)
- Data pipeline tools
- Generative AI tools

Competencies gained with this programme include:

- Understanding core AI and ML concepts
- AI and ML life cycle management
- Data engineering for AI and ML
- AI and ML security
- AI and ML Sustainability
- Using generative and agentic AI

Required Tools

This course requires learners to have access to Microsoft Excel (ideally 2016 or later) and Power BI Desktop (free, no license required). Additionally, learners must have access to free generative AI (GenAI) tools such as OpenAI's ChatGPT, Google's Gemini, Anthropic's Claude, or Microsoft's Copilot.

As organisational policies on generative AI tools vary, learners must secure approval from their employer and confirm access before applying to this programme.