



# **Certified AI Professional: Master Machine Learning, NLP, and AI Governance Training Course**

18 – 22 April 2027  
Cape town



## Certified AI Professional: Master Machine Learning, NLP, and AI Governance Training Course

**Ref:** 103600324\_100102 **Date:** 18 – 22 April 2027 **Location:** Cape town **Fees:** 6000 Euro

### Overview

Organizations deploy artificial intelligence to accelerate automation, extract insights from unstructured data, and enhance operational decision-making. This professional course provides structured technical instruction across machine learning, deep learning, natural language processing, and responsible AI oversight. Participants explore algorithm design, neural network architectures, computer vision, and AI risk management to deploy functional models aligned with organizational standards. Practical workshops examine data preprocessing, model evaluation, and governance policies to manage operational risk while realizing business value. This course is delivered by Agile Leaders Training Center.

### Who Should Attend

- AI specialists and data scientists building, evaluating, and deploying machine learning models.
- Software engineers and IT managers supervising machine learning pipelines and infrastructure.
- Risk managers and compliance officers establishing governance controls for automated systems.
- Business leaders evaluating natural language processing and computer vision opportunities.
- Technology professionals transitioning into technical artificial intelligence management.

### Departments and Industries

This programme serves technical and governance teams across data-intensive sectors.

- Data Science and Engineering Teams in Technology and Software
- Risk and Compliance Departments in Banking and Financial Services
- Clinical Informatics and Diagnostics Units in Healthcare
- Supply Chain and Robotics Automation Groups in Manufacturing
- Digital Analytics and Personalization Teams in Retail and E-Commerce

### Learning Objectives

By the end of this course, participants will be able to:

- Construct and tune supervised and unsupervised machine learning algorithms for business workflows.
- Design deep learning architectures using convolutional and recurrent neural networks.
- Implement natural language processing workflows for text classification and conversational tools.
- Evaluate computer vision pipelines for automated visual inspection and object recognition.
- Establish AI governance and compliance frameworks to manage data privacy and bias risks.
- Formulate end-to-end deployment plans integrating model monitoring and technical controls.



## Course Agenda

### Day 1: Foundations of AI and Data Preprocessing

- Core artificial intelligence concepts and structured business applications
- Exploratory data analysis and visualization methods for model development
- Principles of machine learning algorithms and statistical validation
- Data cleaning, feature selection, and transformation techniques
- Foundations of AI risk, data privacy, and compliance obligations
- Review of exploratory data pipelines and preparation workflows

### Day 2: Machine Learning and Model Development

- Supervised learning models: regression, classification trees, and ensembles
- Unsupervised learning algorithms: clustering methods and dimensionality reduction
- Model evaluation metrics, cross-validation, and performance benchmarking
- Hyperparameter tuning and regularisation techniques to prevent overfitting
- Reinforcement learning concepts and optimization principles in automation
- Analysis of machine learning model development case studies

### Day 3: Deep Learning and Natural Language Processing

- Neural network architectures, activation functions, and backpropagation
- Convolutional and recurrent neural networks for sequential and spatial data
- Natural language processing applications, text tokenization, and vectorization
- Sentiment analysis, document classification, and conversational chatbot design
- Speech recognition pipelines and conversational artificial intelligence
- Practical exercises in text classification and deep model diagnostics

### Day 4: Computer Vision, Robotics, and Predictive Analytics

- Computer vision pipelines, image processing, and object detection techniques
- Robotics automation architectures and industrial control integration
- Predictive analytics in business operations and demand forecasting
- Ethical AI implementation: mitigating algorithmic bias and ensuring fairness
- AI governance and corporate compliance frameworks for automated systems
- Review of operational deployment challenges in physical and digital systems

### Day 5: AI Strategy, Deployment, and Governance Management

- Model deployment architectures, containerization, and API integration
- Continuous model monitoring, drift detection, and performance audits
- AI project management frameworks and cross-functional team alignment
- Corporate AI governance policies and risk mitigation strategies
- Assessment of artificial intelligence implementation roadmaps
- Final course evaluation and structured program synthesis



## Practical Exercises

Participants engage in hands-on technical workshops and structured analytical exercises.

- Build and evaluate a machine learning model using supervised learning techniques.
- Implement a natural language processing pipeline for automated sentiment classification.
- Draft an AI governance checklist addressing data privacy, bias risk, and auditability.
- Formulate an end-to-end model deployment strategy with monitoring controls.

## FAQs

### **What specific qualifications or prerequisites are needed for participants before enrolling in the course?**

Participants should have a foundational understanding of data concepts and practical exposure to information technology, business analysis, or quantitative problem solving. Advanced coding proficiency is not required.

### **How long is each day's session, and is there a total number of hours required for the entire course?**

Each day consists of four to five instructional hours, including practical exercises, case reviews, and collaborative discussions, totaling approximately twenty to twenty-five hours over five days.

### **How does AI Governance impact business decisions?**

AI governance provides systematic accountability, transparent algorithmic logic, and regulatory alignment, reducing technical and legal exposure while ensuring automated recommendations support corporate goals.

## Conclusion

Participants complete the programme prepared to design, deploy, and govern artificial intelligence initiatives within their organizations. By combining technical proficiency in machine learning and natural language processing with robust compliance frameworks, professionals steer reliable automation strategies that deliver tangible operational value.