



# Training Course: Foundations of Artificial Intelligence: An Introduction to AI Concepts

1 - 5 June 2025 Manama (Bahrain) Fraser Suites



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Training Course code: IT235086 From: 1 - 5 June 2025 Venue: Manama (Bahrain) - Fraser Suites Training Course Fees: 4675 

Euro

### Introduction

Artificial Intelligence AI has emerged as a transformative technology, revolutionizing various industries and shaping the way we interact with the world. As AI becomes increasingly integrated into our lives, it is crucial for individuals and professionals to grasp the foundational concepts of this field. This training program, "Foundations of Artificial Intelligence: An Introduction to AI Concepts," aims to provide participants with a comprehensive understanding of AI principles, techniques, and applications.

### **Target Audience**

The training program is designed for individuals and professionals with a basic understanding of programming and a keen interest in artificial intelligence. It is suitable for:

- 1. Students and Graduates: Computer science, engineering, and science students looking to explore Al and its potential career opportunities.
- 2. Software Developers: Professionals seeking to transition or expand their skills into AI development and applications.
- 3. Data Scientists and Analysts: Individuals looking to integrate AI techniques into their data analysis and prediction tasks.
- 4. Decision-makers and Business Leaders: Managers and executives aiming to understand AI applications and implications to make informed decisions.
- 5. Enthusiasts: Anyone with a curiosity about AI and its impact on society, irrespective of their technical background.

## **Objectives**

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

- 1. Define Artificial Intelligence and comprehend its various subfields and applications.
- 2. Understand the different categories of Machine Learning and their use cases.
- 3. Implement common Machine Learning algorithms and evaluate model performance.
- 4. Grasp the fundamentals of Deep Learning and build Neural Networks for image and text analysis.
- 5. Explore Natural Language Processing techniques and apply them to real-world NLP problems.
- 6. Comprehend the principles of Reinforcement Learning and develop simple Al agents.
- 7. Analyze AI ethics and bias, and apply responsible AI practices in their projects.
- 8. Discuss advanced AI topics like Generative Adversarial Networks GANs and Transfer Learning.
- 9. Evaluate Al's impact on society, ethics, and its role in shaping the future of various industries.



### Training program outline

### Day 1: Introduction to AI and Machine Learning

- Overview of Artificial Intelligence and its subfields
- · History and evolution of AI
- Types of Machine Learning: supervised, unsupervised, and reinforcement learning
- Common machine learning algorithms: Decision Trees, Random Forests, SVM, KN

### Day 2: Deep Learning and Neural Networks

Introduction to Neural Networks and Deep Learning

- Feedforward Neural Networks and Backpropagation
- Activation functions and regularization techniques
- Convolutional Neural Networks CNNs for computer vision tasks
- Recurrent Neural Networks RNNs for sequential data analysis

### Day 3: Natural Language Processing NLP

Fundamentals of NLP and its Applications

- · Text preprocessing techniques: tokenization, stemming, and lemmatization
- Word embeddings: Word2Vec and GloVe
- Sequence-to-Sequence models for machine translation
- Sentiment analysis using NLP techniques

### Day 4: Advanced Al Topics

Reinforcement Learning: Markov Decision Processes MDPs and Q-Learning

- Deep Q Networks DQNs and policy gradients
- Generative Adversarial Networks GANs for data generation
- Transfer learning and fine-tuning pre-trained models

### Day 5: Al Ethics and the Future of Al

Ethical Considerations in Al Development and Deployment

- Bias in AI systems and strategies for mitigating it
- · Al safety and explainability
- · Al's impact on the job market and workforce
- Emerging trends in AI research and applications



# Registration form on the Training Course: Foundations of Artificial Intelligence: An Introduction to Al Concepts

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