Fundamentals of Machine Learning for Beginners Training Course

14 - 18 Dec 2026

Cairo

3700 € (Per Person)

Ref: #AI3674_263853

Course Introduction / Overview:

This training course is designed to introduce beginners to the core concepts and practical applications of machine learning. As a key subfield of artificial intelligence, machine learning is at the heart of modern data-driven decision-making. This program, offered by BIG BEN Training Center, demystifies complex algorithms and provides a clear, step-by-step pathway to understanding how to build and evaluate predictive models. We will cover the foundational types of machine learning, including supervised, unsupervised, and reinforcement learning, with a focus on practical examples. The course uses a conceptual approach, explaining the intuition behind algorithms like linear regression and K-Means clustering before diving into implementation. The content is inspired by the clear and concise explanations found in "The Hundred-Page Machine Learning Book" by Andriy Burkov, which focuses on providing a solid conceptual understanding without unnecessary jargon. Participants will gain the confidence to apply machine learning to real-world problems and explore its vast potential across various industries.

Target Audience / This training course is suitable for:

- Aspiring data scientists and machine learning engineers.
- Software developers looking to integrate machine learning.
- Business analysts and strategists.
- Project managers overseeing AI initiatives.
- Students from non-technical backgrounds.
- Anyone interested in understanding the basics of AI.

Target Sectors and Industries:

- Technology and software development.
- Financial services.
- Retail and e-commerce.
- Healthcare.
- Marketing and advertising.
- Manufacturing.
- Telecommunications.
- Government and public administration.

Target Organizations Departments:

- Data and Analytics.
- Information Technology.
- Research and Development.
- Product Management.
- Business Strategy.
- Marketing.
- Operations.
- Finance.

Course Offerings:

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

- Explain the core concepts of supervised and unsupervised learning.
- Distinguish between different types of machine learning algorithms.
- Prepare and clean data for model training.
- Build a simple predictive model using a machine learning algorithm.
- Evaluate the performance of a machine learning model.
- Interpret the results of a machine learning analysis.
- Understand the ethical considerations in machine learning.
- Identify real-world business problems suitable for machine learning.

Course Methodology:

This training course at BIG BEN Training Center uses a pedagogical methodology that is ideal for beginners. The program is built on a "concept first, code second" approach, ensuring that participants develop a strong conceptual foundation before they write any code. We will use a variety of interactive methods to facilitate learning, including whiteboard sessions to explain algorithms, group discussions on real-world case studies, and hands-on exercises that reinforce each new topic. The training avoids complex mathematical formulas and focuses on building intuition. Participants will work on a series of small, guided projects, allowing them to apply each learned concept immediately. This approach builds confidence and a clear understanding of the entire machine learning pipeline. This methodology ensures that participants, regardless of their background, can grasp the fundamentals and start their journey in the field of AI.

Course Agenda (Course Units):

Unit One: Introduction to Machine Learning.

- What is machine learning and why is it important?
- The machine learning workflow: from data to model.
- Types of machine learning: supervised, unsupervised, and reinforcement learning.
- Key terminology and concepts.
- Ethical considerations in machine learning.

Unit Two: Supervised Learning.

- Introduction to supervised learning.
- Linear regression: predicting continuous values.
- Classification problems and logistic regression.
- Understanding model training and testing.
- The concept of overfitting and underfitting.

Unit Three: Unsupervised Learning.

- Introduction to unsupervised learning and its applications.
- Clustering algorithms: K-Means clustering.
- Dimensionality reduction with Principal Component Analysis.
- Understanding market segmentation using clustering.
- Practical applications of unsupervised learning.

Unit Four: Building and Evaluating a Model.

- Data preparation: cleaning, scaling, and feature engineering.
- Splitting data for training and testing.
- Evaluating model performance with metrics.
- Understanding the confusion matrix.
- Using cross-validation to improve model reliability.

Unit Five: Beyond the Basics.

- Introduction to neural networks and deep learning.
- Case studies in various industries.
- Tools and libraries for machine learning.
- Next steps in your machine learning journey.
- Thinking about the future of AI.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

In what ways does a clear conceptual understanding of machine learning principles empower a beginner to not only use pre-built models but also to critically evaluate their limitations and potential for misuse?

What unique qualities does this course offer compared to other courses?

This training course is specifically designed for absolute beginners and non-technical professionals who want a strong, practical foundation in machine learning. Unlike many other courses that quickly dive into complex code and mathematics, our program uses a unique conceptual-first approach. We ensure that participants understand the "why" behind each algorithm before learning the "how." The curriculum is built on a clear, jargon-free framework that makes abstract concepts accessible and engaging. The course focuses on building intuition, not just memorization, and provides hands-on exercises that are relevant to real-world business problems. Participants will leave with a complete understanding of the machine learning lifecycle and the confidence to apply these concepts in their roles, making this a perfect entry point into the world of AI and data science.