Machine Learning Associate

Course Syllabus

Accredited with IABAC™

(International Association of Business Analytics Certifications)`

Module 1: Machine Learning Introduction

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- ✓ What is Machine Learning
- ✓ Applications of Machine Learning
- ✓ Machine Learning vs Artificial Intelligence
- ✓ Machine Learning Languages and platforms
- ✓ Machine Learning vs Statistical Modelling

Module 2: Machine Learning Algorithms

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- ✓ Popular Machine Learning Algorithms
- ✓ Clustering, Classification and Regression
- ✓ Supervised vs Unsupervised Learning
- ✓ Application of Supervised Learning Algorithms
- ✓ Application of Unsupervised Learning Algorithms
- ✓ Overview of modeling Machine Learning Algorithm : Train , Evaluation and Testing.
- ✓ How to choose Machine Learning Algorithm?

Module 3: Supervised Learning I

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- ✓ **Simple Linear Regression :** Theory, Implementing in Python (and R), Working on use case.
- ✓ **Multiple Linear Regression :** Theory, Implementing in Python (and R), Working on use case.
- ✓ **K-Nearest Neighbors :** Theory, Implementing in Python (and R), KNN advantages, Working on use case.
- ✓ **Decision Trees :** Theory, Implementing in Python (and R), Decision |Tree Pros and Cons, Working on use case.
- ✓ **Random Forests :** Theory, Implementing in Python (and R), Reliability of Random Forests, Working on Use Case.

Module 4: Supervised Learning II

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- ✓ **Naive Bayes Classifier:** Theory, Implementing in Python (and R), Why Naive Bayes is simple yet powerful, Working on use case.
- ✓ **Support Vector Machines:** Theory,Support vector machines with Python (and R),Improving the performance with Kernals, Working on Use Case.
- ✓ **Association Rules:** Theory, Implementing in Python (and R),Working on use case.
- ✓ **Model Evaluation:** Overfitting & Underfitting
- ✓ Understanding Different Evaluation Models

Module 5: Unsupervised Learning

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- ✓ **K-Means Clustering:** Theory, Euclidean Distance method.
- ✓ K-Means hands on with Python (and R)
- ✓ K-Means Advantages & Disadvantages
- ✓ **Hierarchical Clustering :** Theory
- ✓ Hierarchical Clustering with Python (and R)
- ✓ Hierarchical Advantages & Disadvantages

Module 6: Dimensionality Reduction

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- ✓ **Dimensionality Reduction**: Feature Extraction & Selection
- ✓ **Principal Component Analysis (PCA) :** Theory, Eigen Vectors
- ✓ **PCA** example with Python (and R) with Use case
- ✓ Advantages of Dimensionality Reduction
- ✓ Application of Dimensinality Reduction with case study.
- ✓ Collaborative Filtering & Its Challenges

End of the Syllabus

- This is a standard syllabus as per Accreditation Body, IABAC™ International Association of Business Analytics (USA).
- The syllabus can be customized on request for corporate clients to suit their training requirements.
- The certification exam will be based on the IABAC™ Syllabus.

DataMites™ is a global institute of Data Science, Machine Learning and Artificial Intelligence Training and Consulting for individuals and Corporate.

For courses enquires call : 1800 200 6848 (Toll Free)

Email : **enquiry@datamites.com** | **Corporate Clients** : **corp@datamites.com**

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