Machine Learning Basics for Business Intelligence Training Course

Professional Development Training Course Outline

Category	Business Intelligence	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Machine Learning (ML) has become an essential component for business intelligence (BI) professionals, enabling data-driven decision-making and predictive analytics. Machine Learning Basics for Business Intelligence Training Course provides a comprehensive introduction to the fundamentals of ML, emphasizing practical applications within BI frameworks. Participants will gain hands-on experience in data preprocessing, model building, and performance evaluation, equipping them with the skills to turn raw data into actionable insights. By combining theory with real-world examples, this course ensures learners can bridge the gap between technical ML concepts and business problem-solving.

The course emphasizes emerging trends in machine learning for BI, including supervised and unsupervised learning, regression and classification techniques, and model optimization strategies. Attendees will explore the integration of ML tools with BI platforms, enabling predictive analytics, forecasting, and intelligent reporting. Whether you are a beginner seeking foundational knowledge or a professional aiming to enhance analytical capabilities, this training provides the practical expertise needed to leverage ML for strategic decision-making and business growth.

Programme Curriculum

Machine Learning Basics for BI Training Course

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Course Objectives

1. Understand the fundamentals of Machine Learning and its role in business intelligence.
2. Explore supervised learning techniques for predictive analytics.
3. Implement unsupervised learning algorithms for data segmentation.
4. Develop regression models for forecasting business outcomes.
5. Apply classification algorithms to improve decision-making processes.
6. Conduct feature selection and data preprocessing for optimal model performance.
7. Evaluate model accuracy using advanced performance metrics.
8. Integrate ML workflows with BI platforms for automated reporting.
9. Utilize real-world datasets to develop actionable business insights.
10. Leverage trend analysis to predict market behaviors and patterns.
11. Apply ML in sales, marketing, finance, and operations BI scenarios.
12. Enhance data visualization with predictive analytics outputs.
13. Implement ethical and responsible AI practices in business contexts.

Organizational Benefits

- Accelerate data-driven decision-making across departments.
- Enhance forecasting accuracy for sales, finance, and operations.
- Reduce time and cost in analyzing complex datasets.
- Improve customer segmentation and targeting strategies.
- Strengthen competitive advantage through predictive insights.
- Standardize ML practices within BI teams.
- Increase collaboration between data analysts and business managers.
- Enable faster identification of business trends and anomalies.
- Support strategic planning with data-backed insights.
- Foster a culture of innovation through AI adoption.

Target Audience

- Business Intelligence Analysts
- Data Analysts and Data Scientists
- Business Consultants
- IT Professionals and Developers
- Marketing Analysts
- Finance Analysts
- Operations Managers
- Project Managers

Course Duration: 5 days

Course Modules

Module 1: Introduction to Machine Learning for BI

- Overview of machine learning concepts
- Role of ML in business intelligence
- Difference between traditional analytics and ML-based analytics
- Introduction to supervised and unsupervised learning
- Key ML tools and libraries for BI
- Case Study: Implementing ML in sales forecasting

Module 2: Data Preprocessing and Feature Engineering

- Data cleaning and transformation techniques
- Handling missing values and outliers
- Feature selection and dimensionality reduction
- Encoding categorical variables for ML models
- Scaling and normalization of features
- Case Study: Preparing marketing data for ML predictions

Module 3: Supervised Learning Techniques

- Introduction to regression models
- Linear vs. logistic regression in BI
- Decision trees and random forests for prediction
- Model evaluation metrics (accuracy, precision, recall)
- Overfitting and underfitting solutions
- Case Study: Predicting customer churn

Module 4: Unsupervised Learning Techniques

- Clustering techniques (K-means, hierarchical)
- Dimensionality reduction using PCA
- Association rule mining for market basket analysis
- Identifying patterns and trends in datasets
- Applications of unsupervised learning in BI
- Case Study: Segmenting retail customers

Module 5: Model Evaluation and Optimization

- Cross-validation techniques
- Hyperparameter tuning and grid search
- Evaluating model performance with ROC curves and confusion matrices
- Bias-variance trade-off analysis
- Model selection criteria for business applications
- Case Study: Optimizing predictive models for finance data

Module 6: ML Integration with BI Tools

- Connecting ML models with BI dashboards
- Automating analytics with predictive insights
- Reporting and visualization of ML outputs

- Use of Python and R in BI workflows
- Embedding ML results in decision-making pipelines
- Case Study: Enhancing operational efficiency using ML dashboards

Module 7: Ethical Considerations in ML

- Understanding AI and ML ethics
- Data privacy and governance standards
- Bias detection and mitigation in ML models
- Ensuring responsible AI practices in business
- Compliance with regulations and industry standards
- Case Study: Mitigating bias in customer segmentation models

Module 8: Capstone Project

- Selecting a real-world BI problem for ML application
- Data preprocessing and feature engineering
- Model selection, training, and evaluation
- Integration of insights into BI tools
- Presentation of actionable insights to stakeholders
- Case Study: End-to-end predictive analysis for retail sales

Training Methodology

- Interactive instructor-led sessions with practical demonstrations
- Hands-on exercises using real-world BI datasets
- Group discussions and collaborative problem-solving activities
- Case studies to reinforce conceptual understanding
- Quizzes and knowledge checks for skill reinforcement
- Capstone project to apply ML in real BI scenarios

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

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