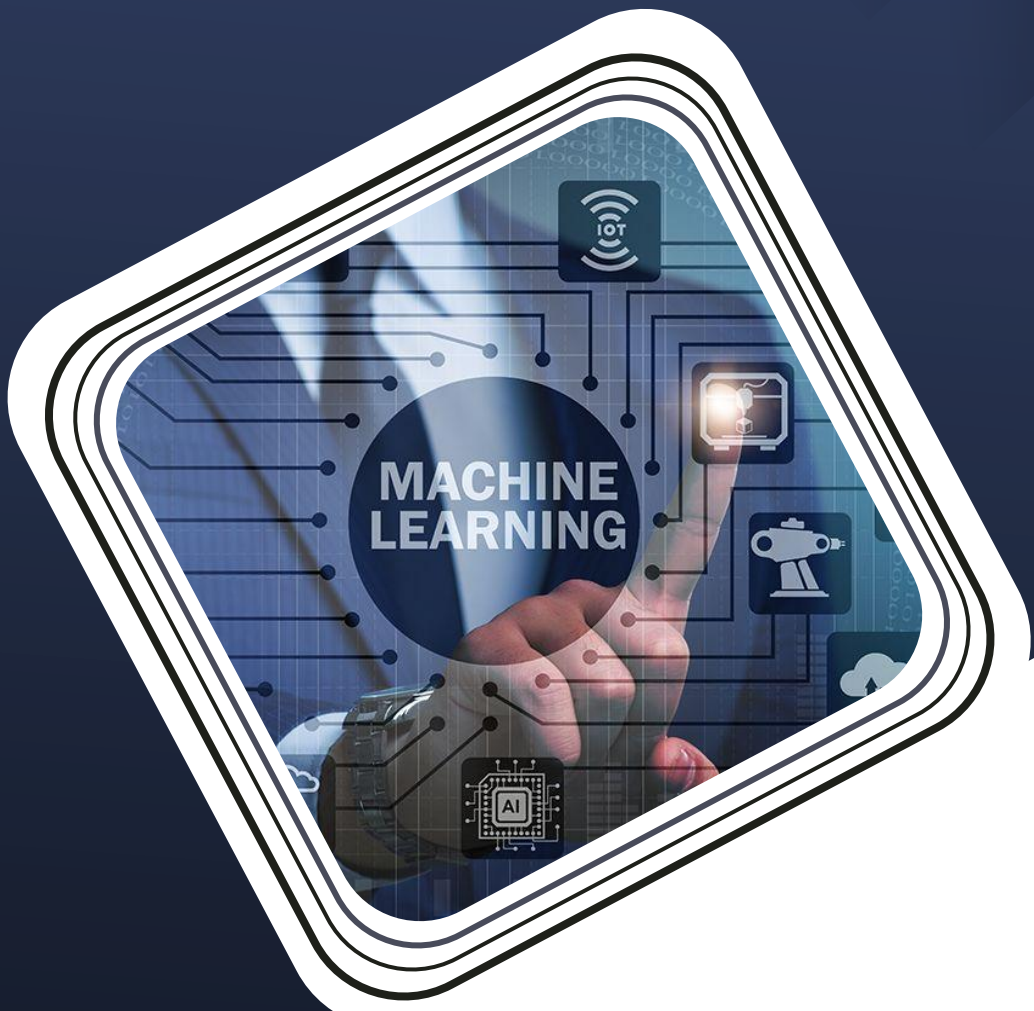
Bright Mentors®



Machine Learning Training Program

Duration: 6 Months

www.brightmentors.in

Module 1: Introduction to Machine Learning

- ✓ What is Machine Learning?
- ✓ Evolution and history of ML
- ✓ Types of Machine Learning: Supervised, Unsupervised, Reinforcement Learning
- ✓ Real-world applications and use cases
- ✓ Machine Learning workflow and life cycle
- ✓ Installing Python and popular ML libraries (NumPy, Pandas, Scikit-learn)

Module 2: Python for Machine Learning

- ✓ Python fundamentals for data science
- ✓ Working with data structures: Lists, Dictionaries, Tuples, Sets
- ✓ NumPy for numerical computing
- ✓ Pandas for data manipulation and analysis
- ✓ Data visualization using Matplotlib and Seaborn

Module 3: Data Preprocessing and Feature Engineering

- ✓ Importance of data cleaning and preprocessing
- ✓ Handling missing data and outliers
- ✓ Encoding categorical variables
- ✓ Feature scaling and normalization
- ✓ Feature selection and dimensionality reduction techniques (e.g., PCA)

Module 4: Supervised Learning

- ✓ Introduction to supervised learning algorithms
- ✓ Linear Regression and its applications
- ✓ Logistic Regression for classification problems
- ✓ Decision Trees and Random Forests
- ✓ Support Vector Machines (SVM)
- ✓ Model evaluation metrics: Accuracy, Precision, Recall, F1-score, ROC-AUC

Module 5: Unsupervised Learning

- ✓ Clustering algorithms: K-Means, Hierarchical Clustering, DBSCAN
- ✓ Dimensionality reduction revisited
- ✓ Association rule learning: Apriori and Eclat algorithms
- ✓ Applications of unsupervised learning in real-world scenarios

Module 6: Advanced Machine Learning Techniques

- ✓ Ensemble methods: Bagging, Boosting, Gradient Boosting, AdaBoost, XGBoost
- ✓ Introduction to Neural Networks and Deep Learning
- ✓ Implementing deep learning models with TensorFlow and Keras
- ✓ Understanding hyperparameter tuning and model optimization

Module 7: Model Deployment and Real-World Projects

- ✓ Introduction to model deployment concepts
- ✓ Saving and loading ML models
- ✓ Building RESTful APIs for ML models with Flask
- ✓ End-to-end ML project: Data collection, preprocessing, modeling, deployment
- ✓ Working on real-world datasets and industry case studies

Additional Features

- ✅ **Hands-on Projects** – Apply concepts by working on live projects
- ✅ **Interview Preparation** – Practice MCQs, coding problems, and mock interviews
- ✅ **Industry-recognized Certification** – Validate your skills for job readiness
- ✅ **Experience Certificate** – Based on practical project work

Learning Management System

Key Features Learning Management System

Live Sessions with Class Recordings

Gain access to interactive live training sessions along with recorded classes to reinforce learning at your own pace.

Expert-Led Training Sessions

Learn from industry experts through structured training sessions designed to enhance your skills and practical knowledge.

Earn Your Training Certificate

Receive an official training certification upon successful course completion to validate your learning and expertise.

Experience Certificate for Professionals

Get an experience certificate based on your hands-on project work and practical assessments.