

Machine Learning Certification Course

- Comprehensive and targeted course with **60+ hours targeted course**.
- 12+ hours videos on Mathematical Foundation in Linear Regression, Multivariate Calculus, Probability & Statistics.
- 6+ Hours videos in Python Foundation.
- Instructor led Live Online Program.
- Dedicated Live Doubt Clearing Session from Course Mentors only.
- Sessions recording available to every student after each session.
- Program offers Blended Learning Pedagogy with Minimal Disruption To Work Schedule.
- Live Projects : Hands-On Industry Projects at Kaggle.
- Advanced machine learning and AI concepts such as Begging & Boosting, XGBoost, Ensembmlng and PCA/LDA.
- Language of Communication : ENGLISH + HINDI
- Learn cutting-edge applications through live projects under guidance of industry experts.
- Apply for suitable Machine Learning, Data Science and AI profiles. At IT Bodhi you will get expert mentorship which will help you prepare for best of the industry jobs.
- LEARN AT YOUR PACE : You have access to course videos for 6 Months + 1 Months that gives you flexibility to learn at your own pace and do a lot of practice to become master in Machine Learning.

1. Machine Learning Foundation:

- **Python for Machine Learning:** Flow, Conditions & Loops, Variables, Operations, Functions, Data structures (Array, Lists, Strings, Sets, Dictionary, Tuples, Series, Tensors), Data Frame Manipulation and Data Visualization.
- Mathematics for Machine learning:
 - Linear Algebra
 - Multivariate calculus
 - Probability theory and Probability Distributions
 - Matrices, Vectors and their application for Data Analysis.
- Computer Science & Algorithms: Matrix implementation/ Data Structures & Algorithms
- Functions and Graphs
- Statistics and it's applications
- Hypothesis Testing

2. Getting Started with Data Science/Machine Learning

- What is Machine Learning– Examples and Applications
- Numpy and Pandas Tutorial
- Scikit Learn Tutorial
- Machine Learning Algorithms
- Cost Function
- Metrics for Model Evaluation and Validation
- Training and Testing

- Model Overfitting - Underfitting
- Bias & Variance
- Gradient Descent Optimization & Learning Rate
- Bias & Variance
- Hyper-parameters Tuning & Model Optimization
- S2 Mini-Projects to understand and implement Machine Learning Basics

3. Data Exploration - Data Preprocessing & Feature Engineering

- Data Extraction, Transformation, and Loading
- Data Wrangling and Data Exploration.
- Data Pre-processing
- Data Visualization
- Feature Selection
- Feature Transformations
- Outlier Detection and Handling
- Handling Missing Values

4. Supervised Learning

- Introduction to Supervised Learning
- Linear Regression
- Logistic Regression
- Decision Trees
- Random Forests
- Naïve Bayes Classifier
- Bayesian Statistics and Inference
- K-Nearest Neighbor
- Support Vector Machine – SVM
- One mini project hands-on for each algorithm

5. Unsupervised Learning

- Introduction to Unsupervised Learning
- K-Means Clustering
- Agglomerative Hierarchical Clustering
- Clustering using DBSCAN
- Expectation–Maximization (EM) Clustering using Gaussian Mixture Models (GMM)
- Clustering Mini-Project

6. Deep Learning

- Introduction to Deep Learning
- Introduction to **Google Colab**
- Machine Learning VS Deep Learning
- Introduction to Neural Networks
- TensorFlow/Theano/Keras
- Deep Neural networks
- Forward propagation
- Back Propagation Learning

7. Dimensionality Reduction

- PCA
- LDA
- Kernel PCA
- SMOTE

8. Ensemble, Bagging & Boosting

- k-fold Cross Validation
- Grid Search
- Bagging & Boosting
- ADA boost
- XGBoost
- Light GBM
- Ensembling Techniques
- Stacking

9. Major projects covered during the course

- All ML algorithms will be covered with hands-on mini projects
- 10-15 mini projects
- **Capstone Projects:**
 - Advance House price Prediction Project
 - Loan Approval Classification Project
 - Breast Cancer Detection Project
 - Mushroom Classification Project
 - IRISH Flower Multi Classification Project
 - Wine Multi Classification Project
 - Diabetes Prediction Project
 - Titanic Survival Project
 - Credit Card Fraud Detection Project
- Hackathons & Competitions
- Introduction to Kaggle Platform and other Data Science Competitions
- Kaggle project competitions for internship and Job offer.

10. Job & Internship Interviews Preparation

Acing Machine Learning Job interviews & Internship Interviews

- -Preparation of ML interview questions
- -Showcasing and presenting ML projects in interviews?
- -Presenting E2E Industry project in interviews?
- -How to make a big Impact with academic knowledge + Machine learning?