Geeks Analytics

Machine Learning Using Python

Certification Program

Build Job-Ready ML Skills | Automate Intelligence | Master Advanced Analytics

2026

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PROGRAM OVERVIEW

About the Program

Machine Learning using Python is one of the most in-demand skills globally, empowering professionals to build intelligent systems that learn from data and make accurate predictions.
This live training program is designed to help you:

- Understand core machine learning concepts and algorithms
- Build and evaluate predictive models using Python
- Work with libraries like NumPy, Pandas, Scikit-learn and Matplotlib
- Deploy end-to-end machine learning projects

Perfect for students and professionals aiming to enter or grow in data science, AI and machine learning roles.

Why We Are Unique?

We are the ONLY organization offering a true JOB ORIENTED Programme

- Personalized learning pace
- Full attention
- Faster mastery
- Custom feedback
- High clarity and confidence
- Money Back Guarantee
- Brilliant Talent to get a chance for securing permanent position with Geeks Analytics

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MODULES & CURRICULUM

Transform Your ML Skills.
Build. Predict. Scale.

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Module 1: NumPy Fundamentals for EDA

- Basics of NumPy: Arrays, Attributes, Indexing & Slicing
- Array Operations: Element-wise, Broadcasting, Statistical functions
- Data Manipulation: Reshaping, Concatenation, Splitting
- Random numbers: Uniform, Normal, Integers

Module 2: Pandas Fundamentals for EDA

- Introduction to Pandas: Series, DataFrame, Importing Data
- Indexing & Selection: loc, iloc, Boolean indexing
- Data Cleaning: Missing values, Duplicates, Inconsistencies, Data types
- Data Transformation: Sorting, Grouping, Applying functions, Merging
- Descriptive Statistics: Mean, Median, Mode, Correlation, Frequency

Module 3: Introduction to EDA and Visualisation

- What is EDA?
- Importance of EDA in Data Science
- Types of EDA: Univariate, Bivariate, Multivariate
- Workflow of EDA: Data Collection→ Cleaning → Exploration → Visualization → Insights
- Real dataset analysis (Titanic, Iris, Sales data)
- Step-by-step EDA workflow: Understanding, Cleaning, Summary, Relationships, Insights

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Machine Learning using Python

Module 4: NumPy Fundamentals for EDA

- Population vs Sample
- Descriptive vs Inferential Statistics
- Types of Data: Qualitative, Quantitative, Continuous, Discrete
- Scales of Measurement: Nominal, Ordinal, Interval, Ratio

Module 5: Descriptive Statistics

- Measures of Central Tendency: Mean, Median, Mode, Weighted Mean
- Measures of Dispersion: Range, Variance, Standard Deviation, IQR, Coefficient of Variation
- Data Distribution: Normal Distribution, Skewness, Kurtosis, Outliers

Module 6: Probability & Probability Distributions

- Probability Basics: Random Experiments, Events, Sample Space
- Conditional Probability & Bayes' Theorem
- Discrete Distributions: Bernoulli, Binomial, Poisson
- Continuous Distributions: Normal, Uniform, Exponential
- Central Limit Theorem

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Module 7: Inferential Statistics

- Sampling Techniques: Random, Stratified, Cluster
- Sampling Distribution
- Estimation: Point Estimation & Confidence Intervals
- Hypothesis Testing: Null vs Alternative, Errors, p-value
- Statistical Tests: Z-test, T-test, Chi-square, ANOVA

Module 8: Introduction to Machine Learning

- What is Machine Learning?
- ML vs AI vs DL
- Types of Machine Learning: Supervised, Unsupervised

Module 9: Linear regression

- Simple Linear Regression
- Multiple Linear Regression
- Assumptions of Regression
- Logistic Regression (Intro)
- Goodness of Fit: R^2, Adjusted R^2

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Module 10: Supervised Learning Algorithms

- Classification: Logistic Regression, KNN, SVM, Decision Trees, Random Forest
- Ensemble Classification: Gradient Boosting, XGBoost, LightGBM, CatBoost
- Naïve Bayes

Module 11: Unsupervised Learning Algorithms

- Clustering: K-Means, Hierarchical, DBSCAN
- Dimensionality Reduction: PCA

Module 12: Ensemble Methods

- Bagging (Bootstrap Aggregating)
- Random Forest
- Boosting: AdaBoost, Gradient Boosting, XGBoost, CatBoost, LightGBM
- Stacking

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Module 13: Model Evaluation & Validation

- Performance Metrics (Regression: MSE, RMSE, MAE, R^2)
- Classification Metrics: Accuracy, Precision, Recall, F1, ROC-AUC
- Confusion Matrix
- Cross Validation (k-fold, Stratified)
- Bias-Variance Tradeoff

Module 14: Advanced Machine Learning

- Feature Engineering
- Handling Imbalanced Data (SMOTE, Class weights)
- Hyperparameter Tuning (Grid Search, Random Search, Bayesian Optimization)

Module 15: Capstone Projects

- Regression
- Classification

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PROJECT & PORTFOLIO

PROJECTS #1

Hands-On Projects You Will Build
Capstone Project (Mentor Assigned)

PORTFOLIO DELIVERABLES #2

1-2 Real Projects
Capstone Documentation
Resume-Ready Achievements

MOCK INTERVIEWS #3

Mock Up Interviews by Mentors
Job Ready Assessments & Certification
Referrals in Job Openings

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CAREER SUPPORT

Career Growth & Placement Assistance

- LinkedIn Optimization
- Resume Rebuild
- GitHub Improvement
- HR + Technical Mock Interviews
- Job Referrals

EXTRA BENEFITS:

- ✓ Lifetime access to content
- ✓ Flexible learning pace
- ✓ Mentor feedback calls
- ✓ Course Completion Certificate
- ✓ Job Assistance
- ✓ Moneyback Guarantee

✓ **PROVE YOUR BRILLIANCE and step into a PERMANENT POSITION with GEEKS ANALYTICS**

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FEES & ENROLLMENT

Program Fees (Machine Learning using Python Certification Programme)

Duration: 08–12 Weeks (Flexible Pace)

Course Fee: ₹40000- INR/- (MONEY BACK GUARANTEE)

Why Us?	Others	Geeks Analytics
Personalised Mentorship	✗	✓
1:1 Doubt Clearing Session	✗	✓
1:1 Interview Preparation	✗	✓
1:1 Project Engagement	✗	✓
Job Ready Preparation /Referals	✗	✓
WE NEED YOU	✗	✓

NOTE: PRICE MENTIONED ABOVE IS FOR 1 ENROLLMENT AND NON- REFUNDABLE

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Have Questions? Contact Us

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