

AI & Machine Learning with Python

Course syllabus · Live online · Beginner to Intermediate

Learn Python, statistics and machine learning end to end, from data cleaning and modelling to deep learning, generative AI and model deployment.

Live training	96 hours in total
Weekday batch	10 weeks · Monday to Friday, 2 hours per day (10 hours a week)
Weekend batch	12 weeks · Saturday and Sunday, 4 hours each day (8 hours a week)
Self-practice	about 80 hours in total (labs, assignments, revision)
Total effort	about 176 hours including self-practice
Mode	Live instructor-led online sessions · session recordings after each class · small batches
Trainer	Pratiksha
Batch start	Shared by our counselor
Batch timings	Weekday / weekend options, shared by our counselor
Course fee	Shared by our counselor (varies with current offers)

Who is this for?

Graduates, developers and analysts who want to build a career in AI/ML and data science.

Prerequisites

Basic programming logic helps. Python is taught from scratch.

What you will learn

- Write Python for data analysis
- Apply statistics and probability to data problems
- Build, evaluate and tune machine-learning models
- Build neural networks for vision and language tasks
- Use LLM APIs and build simple generative AI apps
- Deploy a model as an API and present projects

Tools and technologies

Python · NumPy · Pandas · Matplotlib/Seaborn · Scikit-learn · TensorFlow/Keras · Jupyter · Git · FastAPI

Detailed syllabus

#	Module	Hours	Topics	Hands-on
1	Python for Data	12	• Python basics, functions, OOP essentials • NumPy arrays and vectorization • Pandas: cleaning, joins, groupby • Visualization with Matplotlib/Seaborn	Exploratory analysis of a real dataset
2	SQL and Data Handling	6	• SQL queries, joins, aggregation • Reading data from files, APIs and databases	SQL practice set

#	Module	Hours	Topics	Hands-on
3	Statistics and Probability	8	• Descriptive statistics and distributions • Probability and Bayes' rule • Hypothesis testing and confidence intervals • Correlation and A/B testing	Statistical analysis assignment
4	Maths for ML (Applied)	4	• Linear algebra intuition • Gradients and optimization	-
5	Machine Learning: Supervised	14	• Linear and logistic regression • Decision trees, random forests, boosting • SVM and k-NN • Bias-variance, cross-validation, tuning • Metrics for regression and classification	Predict house prices and customer churn
6	Machine Learning: Unsupervised and Feature Engineering	8	• Clustering (k-means, hierarchical) • PCA and dimensionality reduction • Feature engineering and pipelines • Handling imbalanced data	Customer segmentation
7	Deep Learning	12	• Neural networks and back-propagation • TensorFlow/Keras workflows • CNNs for image classification • RNN/LSTM basics	Image classifier
8	Natural Language Processing	8	• Text preprocessing and TF-IDF • Embeddings and transformers overview • Sentiment and text classification	Sentiment analysis app
9	Generative AI and LLMs	8	• LLM concepts, tokens and prompting • Using LLM APIs • RAG basics and vector search • Responsible AI	Document Q&A prototype
10	Model Deployment and MLOps Basics	6	• Saving models, FastAPI/Flask serving • Git, virtual environments, Docker basics • Deploying to the cloud	Deploy a model API
11	Capstone and Career Preparation	10	• Capstone project build and review • Portfolio and GitHub • Resume and mock interviews	Capstone
	Total live hours	96		

Projects

- Customer churn prediction
- Image classifier
- Document Q&A (RAG) prototype
- Capstone project

Assessment

Assignments per module, mid-course test and capstone evaluation.

Certification

Course completion certificate and a project portfolio.

What is included

- Live instructor-led online sessions
- Hands-on labs and assignments
- Session recordings after each class
- Doubt-solving support

- Course completion certificate
- Small interactive batches
- Unpaid internship opportunities

Our promise: we do not offer guaranteed-placement claims. We focus on building genuine skills so you are capable of clearing interviews and doing the job. Unpaid internship opportunities are available for practical exposure. Fees and batch dates vary with current offers, so please confirm them with our counselor. This syllabus is indicative and may be updated to reflect industry changes.

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