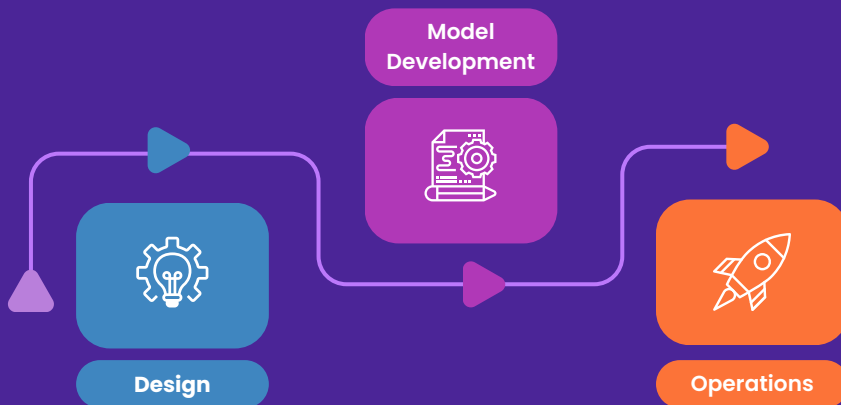


AMPT: AI & ML Practitioner Training

EMPOWERING THE NEXT
GENERATION OF AI ENGINEERS



About the Program

The AI & ML Practitioner Training (AMPT) equips learners with essential skills to bridge the gap between machine learning and production engineering.

This hands-on, project-driven program covers everything from foundational concepts to advanced deployment pipelines—designed to prepare you for real-world AI & ML engineering roles.

You'll explore cutting-edge frameworks like:

- Kubeflow for pipeline orchestration
- MLflow for model tracking and lifecycle management
- Amazon SageMaker for cloud-native model deployment

AMPT prepares you to streamline AI & ML workflows, deploy at scale using Kubernetes, and automate monitoring in production environments—all while advancing your career in the booming field of AI and ML.

Technology Focus

- Python foundations
- AI & ML model building and packaging
- Deployment with Kubeflow, MLflow, SageMaker
- CI/CD, Git, monitoring with Prometheus + Grafana
- Real-world ML projects (loan, sales, CI/CD)

Module 1: Python Basics

Concept 1: Introduction

What is Python?
Installing Python
Python IDEs and Code Editors - PyCharm, VSCode, and Jupyter Notebook, IntelliJ
Scripting vs. Programming
Interpreters vs. compilers

Concept 2: Data Types

String
Integer
Floating
Bool

Concept 3: Variables

Local Variables
Global Variables
Input Variables
Output Variables

Concept 4: Operators

Arithmetic operators
Assignment operators
Comparison operators
Logical operators
Identity operators
Membership operators
Bitwise operators

Module 2: Python Data Structures

Concept 5: Data Structures

List
Tuple
Dictionary
Sets

Module 3: Python Advanced

Concept 6: Objects & Classes

Learn advanced object-oriented programming concepts - classes, objects, inheritance, polymorphism, encapsulation, and abstraction.

Concept 7: File & Data Processor

File Handling - csv, xml, json, xlsx
Learn how to read/write the files - csv, xml, json, xlsx
Data transform methods in Data Pipelines

Concept 8: Control Flow

If
If-else
If-elif-else
Nested-if
for
while
Nested loops
Break
Continue

Concept 9: Functions

Built-in Functions
User Defined Functions
Function Arguments
Function Return Values

Concept 10: Exception Handling

Learn how to handle Python exceptions and raise exceptions.
Understand Try, except, else, finally, and creating custom exceptions.

Concept 11: Modules & Packages

Module Introduction
Package Management
Create Python Packages
Understand how you can write modular code building blocks to reuse functional units of code.

Module 4: Python Libraries

Concept 12: Pandas

Learn how to import Pandas library
Modularize programming to deal with data manipulation and analysis

Concept 13: Numpy

Learn multidimensional data arrays
Import numpy library for numerical computing

Module 5: Python Web Framework

Concept 14: FastAPI Framework

FastAPI fundamentals and asynchronous web applications.

Concept 15: Flask Framework

Flask application deployments

Concept 16: RESTful APIs

Creating and consuming RESTful APIs.

Module 6: Python API Testing & Debugging

Concept 17: Testing & Debugging

Postman
Swagger UI
Common debugging techniques and tools
Writing and running unit tests with unittest and pytest
Jupyter Notebook

Concept 18: Logging

Enhance Logging in Python Development
Learn how to program using logging module

Module 7: AI & ML Basics

19

Concept 19: AI & ML Basics

- What is Machine Learning
- Why MLOps
- MLOps Vs. DevOps
- ML vs. MLOps vs. DS vs. DE
- ML Terminology
- Data Engineering Basics
- Model vs. LLM Vs. AI vs. ML
- Role of LLM

Module 8: Python Libraries & Frameworks

20

Concept 20: Streamlit

- Create Streamlit App
- Deploy Streamlit App
- Integrate Streamlit App with ML models

Module 9: AI/ML Frameworks

21

Concept 21: Kubeflow

- Kubeflow introduction
- Kubeflow pipelines

22

Concept 22: MLflow

- ML Flow Introduction
- ML flow for ML Models life cycle
- Model Packaging and Deployments using ML Flow

23

Concept 23: Amazon SageMaker

- Sage Maker Introduction
- SageMaker Pipelines
- Experiments in SageMaker

24

Concept 24: TensorFlow

TensorFlow Introduction
TensorFlow use cases and Model management of Deep learning Models

25

Concept 25: Pytorch

Pytorch Model build and deployments
Pytorch Use cases

26

Concept 26: LLMs

OpenAI GPT-4
HuggingFace Transformers

27

Concept 27: NLP

LangChain

Module 10: Model Packaging

28

Concept 28: scikit-learn

Scikit-learn ML library
ML Model?
Training the Model
Package the Model
Deploy the Model

Module 11: Data Versioning

29

Concept 29: Git and DVC

Data Version control
What is the Version Control System?
What is Git?
Git Architecture
Git Installation and Configuration
Git Architecture
Git repository management
Git Commands

Module 12: ML CI/CD Pipeline

30

Concept 30: ML CI/CD Pipeline

AWS Code Commit
AWS Code Build
AWS CodePipeline
Jenkins Pipelines

31

Concept 31: ML Life Cycle

Model Life Cycle
Model Planning
Model Training
Model Versioning

Module 13: Model Deployment

32

Concept 30: ML CI/CD Pipeline

Deploy ML Models
Deploy the Models into Kubernetes Clusters

Module 14: Model Monitoring

33

Concept 34: Grafana Stack

Deploy Grafana Monitoring stack
Monitor Model Performance
Monitor Model utilization
Prometheus Setup

Capstone Projects

Project 1: Loan Application Model Deployment with FastAPI integration

Learn how to manage the AI/ML Models flow and API integration architecture with scale.

Project 2: Sales application with Streamlit integration

Learn how to run Streamlit applications and Model integration and Deployments.

Project 3: CI/CD for ML Models

Setup CICD Pipeline for the AI/ML Model predicting the sales inventory
- Learn how to continuously train the model using the given dataset, package the model and deploy the model.

Project 4: AI ChatBot using GPT LLMs

Build an AI-powered chatbot using GPT LLMs to interact with users, answer loan-related queries, and provide personalized financial assistance in real time.

AMPT: AI & ML Practitioner Training

Contact us

info@flairtechnologies.in

www.flairtechnologies.in

WhatsApp: +91 974 974 9596

flairtech17@gmail.com