



PYTHON TRAINING

Python Fundamentals For Mlops Course

Master Python fundamentals for MLOps. Build robust machine learning pipelines and automate model deployment.

DURATION

48 hours

LEVEL

Intermediate

FORMAT

Instructor-Led

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- Globally Recognized Certification
 - Expert-Led Hands-On Training
 - Flexible Scheduling

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COURSE OVERVIEW

The "Python Fundamentals For MLOps Course" is meticulously designed for IT professionals, data scientists, and developers looking to bridge their Python proficiency with the critical practices of Machine Learning Operations (MLOps). This intensive 48-hour program dives deep into core Python programming concepts, data manipulation, and essential machine learning libraries, laying a robust foundation crucial for managing the entire lifecycle of ML models. Participants will learn to write clean, efficient Python code optimized for machine learning pipelines, ensuring models are not only built effectively but also deployed, monitored, and maintained with enterprise-grade reliability.

This course emphasizes practical, hands-on application, transforming theoretical Python knowledge into actionable MLOps skills. You'll explore fundamental MLOps principles, including version control for datasets and models, experiment tracking, continuous integration/continuous delivery (CI/CD) for ML, and model deployment strategies. By mastering these competencies, you'll be equipped to streamline machine learning workflows, enhance collaboration between data science and operations teams, and significantly reduce the time-to-market for intelligent applications. Graduates will possess a highly sought-after skill set that drives operational efficiency and innovation in the rapidly evolving AI landscape.

Duration	48 hours
Level	Intermediate
Vendor	Python

COURSE CURRICULUM

01 Module 1: Python Refresher for Data Science & ML

- Advanced Python Syntax and Data Structures
- Functions, Classes, and Object-Oriented Programming (OOP) in Python
- Error Handling, Debugging, and Logging Best Practices
- Managing Dependencies with Pip and Virtual Environments (venv/conda)
- Introduction to Command-Line Interface (CLI) tools

02 Module 2: Essential Libraries for ML Workflows

- NumPy for Numerical Computing and Array Operations
- Pandas for Data Manipulation, Cleaning, and Analysis
- Scikit-learn for Basic Machine Learning Model Development
- Introduction to Data Visualization with Matplotlib/Seaborn
- Working with diverse data sources (CSV, JSON, APIs)

03 Module 3: Introduction to Machine Learning Concepts and Model Development

- Supervised vs. Unsupervised Learning Paradigms
- Data Preprocessing, Feature Engineering, and Selection
- Model Training, Validation, and Hyperparameter Tuning
- Understanding Model Evaluation Metrics (Accuracy, Precision, Recall, F1, ROC-AUC)
- Serialization and Deserialization of Models (Pickle, Joblib)

04 Module 4: MLOps Principles and Tooling Fundamentals

- Introduction to MLOps: Definition, Goals, and Lifecycle
- Version Control for Code and Data (Git and DVC Concepts)
- Experiment Tracking and Management (Introduction to MLflow Concepts)
- Containerization with Docker: Building and Managing Images for ML Applications

- Principles of Reproducible ML Workflows

05 Module 5: Model Deployment and Basic Monitoring

- Building RESTful APIs for ML Models using Flask or FastAPI
- Containerizing ML APIs for Production Readiness
- Basic Deployment Strategies (Local, Introduction to Cloud Deployments)
- Monitoring Model Performance and Data Drift Concepts
- Introduction to Continuous Integration/Continuous Delivery (CI/CD) for ML

CAREER PATHWAYS

Graduates of this program are prepared for the following roles:

- > **Junior MLOps Engineer: Specializing in automating and managing ML pipelines and infrastructure.**
- > **Associate Machine Learning Engineer: Focused on deploying, monitoring, and scaling ML models in production environments.**
- > **Data Scientist (Production-focused): Bridging the gap between model development and operationalization, ensuring models are robust and maintainable.**

FREQUENTLY ASKED QUESTIONS

Q: What specific Python knowledge and experience are prerequisites for enrolling in this MLOps course?

This course is designed for intermediate learners. You should have a solid foundational understanding of Python programming, including familiarity with variables, data types, control flow (loops, conditionals), and basic function definitions. Prior experience with data science libraries like NumPy or Pandas, or machine learning concepts, while beneficial, is not strictly required as the course includes a robust refresher and foundational modules to bridge these gaps.

Q: How will this course specifically help me transition from a data scientist to an MLOps-focused role?

This course is specifically structured to equip data scientists with the operational skills needed for MLOps. You will learn to move beyond model prototyping to industrializing ML solutions, covering essential practices like code and data versioning, experiment tracking, model deployment via APIs, and containerization with Docker. These skills are critical for collaborating effectively with engineering teams and ensuring your models are production-ready, reliable, and scalable.

Q: Which MLOps tools and technologies will be covered in detail, and what level of hands-on experience can I expect?

This course focuses on the fundamental principles of MLOps while introducing key tools. You will gain practical experience with Git for version control, understand the concepts behind Data Version Control (DVC), explore experiment tracking principles with an introduction to MLflow concepts, and learn to containerize applications using Docker. We will also cover building production-ready APIs with Flask/FastAPI and touch upon CI/CD principles relevant to ML, providing a strong hands-on foundation for these essential MLOps technologies.

ABOUT COMPUTER PRIDE



East Africa's Premier IT Training Center

With over 15 years of excellence, Computer Pride delivers globally recognized certification programs from leading technology vendors. Located on Kenyatta Avenue in Nairobi's CBD, our state-of-the-art facilities and expert instructors have empowered thousands of professionals across East Africa.

15+

Years of Excellence

10,000+

Professionals Trained

50+

Vendor Certifications

READY TO ENROL?

Take the next step in your technology career.

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