# Developing and Deploying AI/ML Applications on Red Hat OpenShift AI (AI267) Training

Duration: **3 Day**

BILGINÇ IT Academy
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## Overview

Gain essential skills in developing, training, and deploying**AI and Machine Learning (ML)** applications using **Red Hat OpenShift AI**.

The course **"Developing and Deploying AI/ML Applications on Red Hat OpenShift AI (AI267)"** equips participants with the foundational knowledge needed to design, train, and manage AI/ML models in OpenShift's enterprise-grade environment.
Through guided labs and hands-on projects, students learn how to build data-driven workflows and automate model deployment efficiently.

> *This course is based on **Red Hat OpenShift® 4.16** and **Red Hat OpenShift AI 2.13**.*

## Prerequisites

- Experience with **Git**.
- Experience in **Python programming** or completion of *Python Programming with Red Hat (AD141)*.
- Familiarity with **OpenShift development** or completion of *Red Hat OpenShift Developer II (DO288)*.
- Basic understanding of **AI, ML, and Data Science** is recommended.

## Who Should Attend

This course is ideal for:

- **Data Scientists** and **AI Specialists** who want to train and deploy ML models on OpenShift AI.
- **Developers** building AI-enabled applications.
- **MLOps Engineers** responsible for managing the ML lifecycle.
- **AI Practitioners** automating end-to-end data science workflows.

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## What You Will Learn

- Introduction to Red Hat OpenShift AI
- Data Science Projects and Workbenches
- Jupyter Notebooks for Interactive Development
- Installing Red Hat OpenShift AI
- Managing Users and Resource Allocations
- Creating Custom Notebook Images
- Introduction to Machine Learning
- Training ML Models
- Enhancing Model Training with RHOAI
- Model Serving Concepts and Deployment
- Serving ML Models in Red Hat OpenShift AI
- Introduction to Data Science Pipelines
- Creating and Managing Pipelines
- Controlling Pipelines and Experiments

### Organizational Impact

Modern enterprises gather massive amounts of data from multiple sources.
With **Red Hat OpenShift AI**, organizations can leverage this data to **analyze trends, visualize insights, and predict business outcomes** using advanced AI and ML techniques — all while maintaining operational security and scalability.

### Individual Impact

By completing this course, you will:

- Understand the **architecture and key components** of Red Hat OpenShift AI.
- Learn to **install, configure, and manage** OpenShift AI and its resources.
- Gain hands-on experience training, deploying, and serving ML models.
- Apply **machine learning best practices** using RHOAI.
- Create and manage **data science pipelines** for automated workflows.

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## Outline

**1. Introduction to Red Hat OpenShift AI**
Identify OpenShift AI's main features, components, and overall architecture.

**2. Data Science Projects**
Organize and manage project code, configurations, and data connections using workbenches.

**3. Jupyter Notebooks**
Execute, visualize, and test code interactively through Jupyter environments.

**4. Installing Red Hat OpenShift AI**
Install and configure OpenShift AI components for AI/ML workloads.

**5. User and Resource Management**
Administer user access and control compute resource allocations.

**6. Custom Notebook Images**
Create, customize, and import notebook images for specialized workloads.

**7. Introduction to Machine Learning**
Learn ML fundamentals, key algorithms, and workflow design.

**8. Training Models**
Train models using standard or custom workbenches within RHOAI.

**9. Enhancing Model Training with RHOAI**
Implement best practices in ML and data science using Red Hat OpenShift AI tools.

**10. Introduction to Model Serving**
Explore the principles and components needed to serve trained models.

**11. Model Serving in OpenShift AI**
Deploy and manage production-ready models in OpenShift AI environments.

**12. Data Science Pipelines**
Set up data pipelines for end-to-end automation and reproducibility.

**13. Working with Pipelines**
Build pipelines using Kubeflow SDK and Elyra.

**14. Controlling Pipelines and Experiments**
Track metrics, artifacts, and experiments for ML lifecycle management.