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for campus

Professional Certification Program

# ML Ops Mastery Program

## Build, Deploy & Scale Production-Ready AI Systems

The **MLOps Mastery Program** is a 6-month professional certificate designed to equip participants with the advanced Machine Learning Operations skills required in today's AI-driven economy.

This program combines world-class MLOps learning content from **Duke University** with applied case studies, hands-on labs, and guided projects supervised by expert instructors from **MUST University**.

Participants gain practical expertise in designing, deploying, automating, and monitoring machine learning systems at scale. The curriculum bridges the gap between Data Science and Software Engineering, enabling professionals to operationalize AI models using modern DevOps and cloud-native practices.

The program culminates in a **Capstone Project**, where participants design and deploy a complete end-to-end MLOps pipeline — from data ingestion to production monitoring.



Format  
**Blended learning**



Language  
**English & French**



6 months  
**Flexible Schedule**



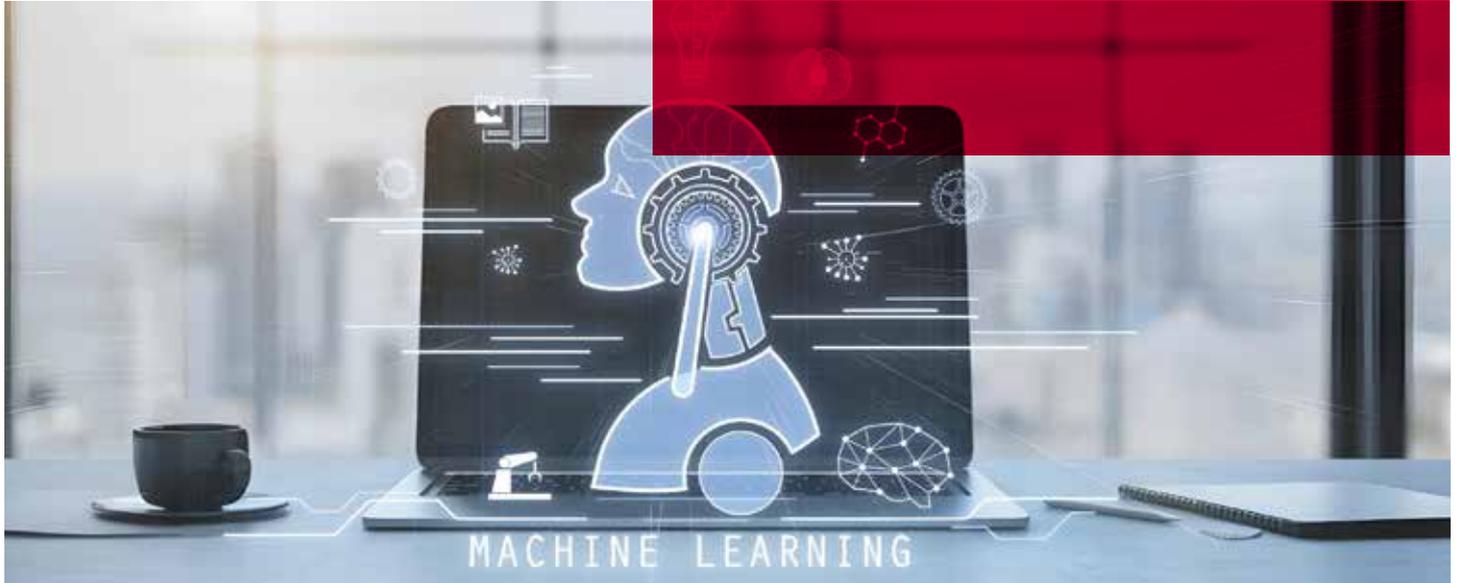
Cost  
**TND 2.800**  
(Fees covered by TFP)



**MUST University**  
LAC 3, Tunis



# PROGRAM STRUCTURE & TOPICS



## 1. Introduction to MLOps

This module introduces the fundamental concepts of Machine Learning Operations and the complete machine learning lifecycle. Participants examine the transition from experimental model development to production deployment, emphasizing reproducibility, scalability, collaboration, and operational reliability. The role of MLOps in bridging Data Science and Software Engineering practices is thoroughly explored.

## 2. Data & Experiment Management

This module focuses on systematic management of data, experiments, and model artifacts throughout the ML lifecycle. Participants learn techniques for dataset versioning, experiment tracking, and reproducible research workflows. Emphasis is placed on collaborative development, traceability, and governance using modern MLOps tools and platforms.

## 3. Model Development & Automation

Participants study automated approaches to model training and evaluation using industry best practices. The module covers pipeline orchestration, automated experimentation, and performance evaluation strategies. AI-assisted development workflows are introduced to improve efficiency, reliability, and consistency in machine learning systems.

## 4. Cloud Platforms & Model Deployment

This module addresses the deployment of machine learning models into production-grade environments.

Participants gain hands-on experience with cloud-based ML platforms, containerization technologies, scalable APIs, and real-time as well as batch inference systems. The module emphasizes secure, scalable, and maintainable deployment architectures.

## 5. CI/CD for Machine Learning

This module applies DevOps principles to machine learning systems. Topics include Continuous Integration and Continuous Delivery (CI/CD) pipelines for ML, automated testing, infrastructure automation, and model lifecycle management. Participants learn how to ensure reliable, repeatable, and auditable ML deployments.

## 6. Monitoring, Governance & Responsible AI

Participants learn methods for monitoring deployed models in production, including performance tracking, data drift detection, and system reliability assessment. The module also introduces governance frameworks, risk management strategies, and responsible AI principles to ensure ethical, transparent, and compliant AI systems.

## 7. Capstone Project – End-to-End MLOps Pipeline

In this final module, participants integrate all acquired knowledge through a comprehensive capstone project. The project involves designing, implementing, deploying, and monitoring a complete end-to-end MLOps pipeline, from data ingestion and model training to production deployment and ongoing monitoring.

# BENEFITS FOR EMPLOYERS & ORGANIZATIONS



## **Faster AI Deployment :**

Accelerate the transition from experimentation to production.

## **Improved Operational Efficiency :**

Reduce manual processes through automation and standardized workflows.

**Scalable AI Infrastructure :** Build robust systems capable of handling growing data and business demands.

## **Higher Quality & Reliability :**

Ensure continuous monitoring, testing, and governance of deployed models.

## **Reduced Risk & Cost :**

Detect degradation and drift early to prevent costly failures.

## **Stronger Collaboration :**

Promote synergy between Data Science, Engineering, and Business teams.

## **Competitive Advantage :**

Deliver AI-powered products faster and respond rapidly to market changes.

# ABOUT THE PROGRAM

## On-line Courses



Access to quality online content  
from MUST & Coursera.

## On Campus Sessions



Ensures that online modules  
are done & quizzes  
are successfully passed



Focuses  
on case studies



Discussions  
& Multiple  
simulations



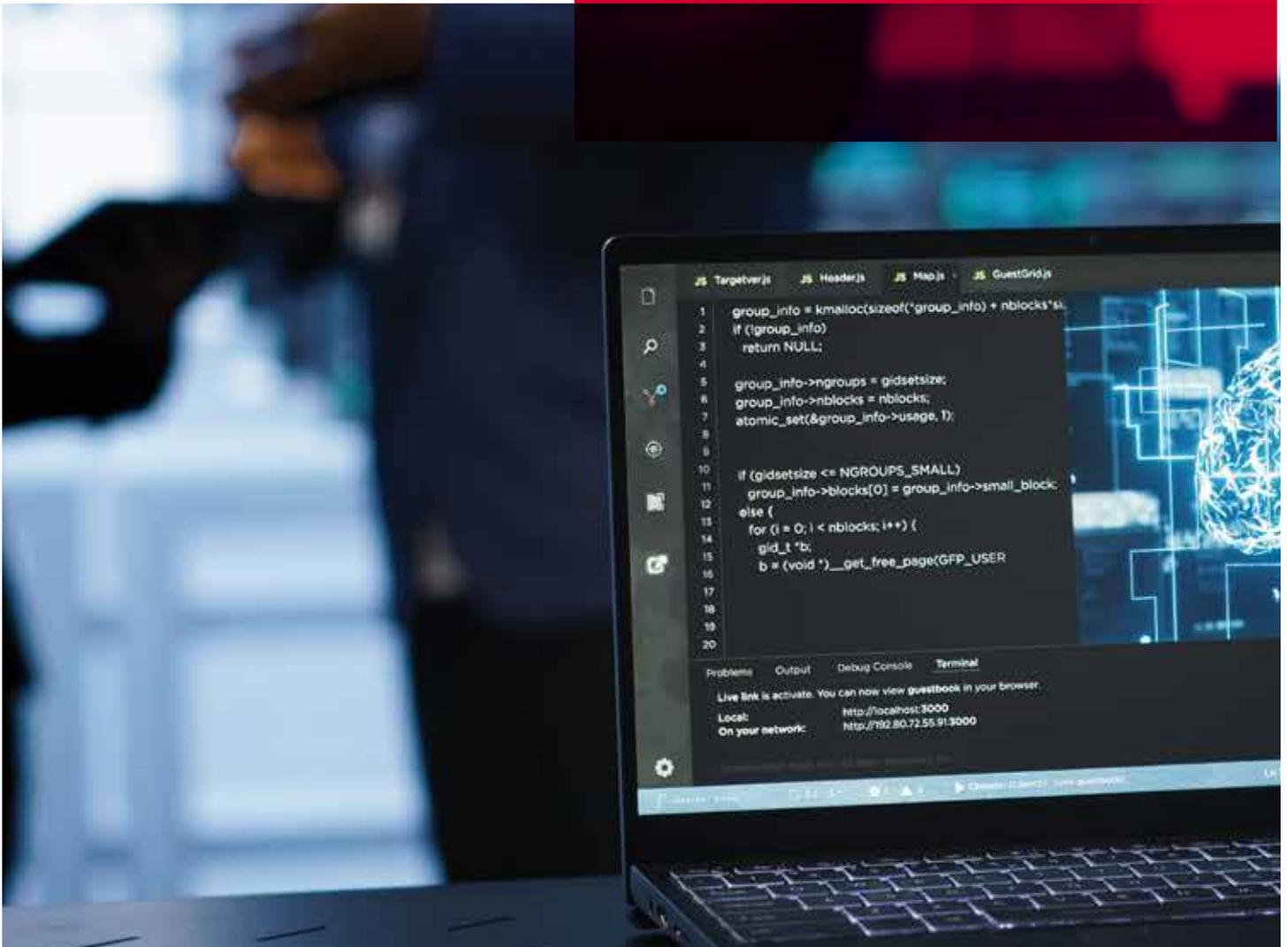
Working on a business challenge  
that's relevant to each  
participant and their company

# WHO IS THIS PROGRAM FOR?



- ★ **Data Scientists**  
seeking production expertise
- ★ **Software Engineers :**  
transitioning into AI & ML Engineering
- ★ **DevOps & Cloud Engineers :**  
expanding into ML lifecycle management
- ★ **AI & Technology Enthusiasts :**  
building scalable intelligent systems
- ★ **IT Managers & Technical Leaders :**  
driving AI adoption
- ★ **Consultants & Digital Transformation Experts :**  
supporting AI integration

# AFTER THIS COURSE YOU WILL BE ABLE TO



- ★ Design and implement end-to-end MLOps pipelines
- ★ Deploy machine learning models into production environments
- ★ Automate training, testing, and deployment using CI/CD
- ★ Manage model versioning and experiment tracking
- ★ Monitor model performance and detect data drift
- ★ Use cloud platforms to scale AI applications
- ★ Collaborate effectively across Data Science, Engineering, and DevOps teams
- ★ Build reliable, production-grade AI solutions aligned with industry best practices

# PROGRAM INSTRUCTORS



## **On-Campus : Anis Ben Aicha**

Data Scientist & Machine Learning Engineer  
Assistant Professor – Information Technology  
Ph.D. in Information, Technology & Communications



## **Duke University : Noah Gift**

Executive in Residence  
Founder of Pragmatic AI Labs

# PROGRAM CERTIFICATIONS



The image is for illustrative purposes only. The actual certificate may be subject to change at the discretion of the university.



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