

LLMOps: Evaluation, Monitoring & Cost Control

2026 000000 20 - 16
Barcelona (Spain)

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R20228747/22203716 **Location:** Barcelona (Spain) **Fees:** 5900 GBP

Why This Course

As organizations increasingly adopt Large Language Models LLMs for real-world applications, managing their lifecycle efficiently has become essential.

LLMOps — the practice of deploying, evaluating, monitoring, and optimizing LLMs — ensures AI systems remain accurate, cost-effective, and aligned with business goals.

This program equips participants with a complete understanding of how to implement LLMOps frameworks that balance performance, reliability, and operational efficiency.

It focuses on evaluation metrics, continuous monitoring, and cost optimization strategies to help organizations deploy scalable, maintainable, and responsible LLM systems.

What You'll Learn and Practice

By joining this program, you will:

- Understand the principles and architecture of LLMOps within the MLOps ecosystem.
- Learn to evaluate LLM performance using quantitative and qualitative methods.
- Develop monitoring pipelines to track model drift, reliability, and hallucination rates.
- Gain practical tools for optimizing model usage and reducing operational costs.
- Build scalable, auditable, and compliant workflows for LLM deployment and maintenance.

The Program Flow

Day 1: Foundations of LLMOps

- The evolution of AI operations: from MLOps to LLMOps.
- Key challenges in managing LLM-based systems scalability, context, cost, bias.
- The LLMOps lifecycle: development, deployment, evaluation, and monitoring.
- Core components — orchestration, logging, prompt management, and observability.
- Case study: implementing LLMOps in a real enterprise setting.

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A graphic of a chessboard with several chess pieces (king, queen, rook, knight, and pawns) in gold and silver, set against a background of concentric circles.

Day 2: Evaluation Frameworks and Metrics

- Importance of LLM evaluation: accuracy, coherence, and consistency.
- Human vs. automated evaluation: strengths and trade-offs.
- Key metrics: relevance, faithfulness, latency, and user satisfaction.
- Evaluation frameworks: OpenAI Evals, LangChain, TruLens, and custom metrics.
- Practical exercise: designing an evaluation workflow for an LLM-based chatbot.

Day 3: Monitoring, Logging, and Drift Detection

- Setting up observability in LLM systems — tracing and performance tracking.
- Detecting drift in model behavior, prompts, or response quality.
- Monitoring hallucinations and response safety using guardrails.
- Logging interactions for transparency and reproducibility.
- Workshop: building a live monitoring dashboard for an LLM API.

Day 4: Cost Control and Resource Optimization

- Understanding LLM cost drivers — token usage, context length, and model size.
- Cost optimization strategies: caching, batching, and model selection.
- Using open-source and smaller fine-tuned models effectively.
- Budgeting and forecasting for large-scale LLM deployments.
- Simulation: implementing a cost-reduction plan for a production LLM system.

Day 5: Governance, Automation, and Continuous Improvement

- Governance frameworks for responsible LLM deployment compliance and ethics.
- Automating evaluation, retraining, and monitoring cycles.
- Integrating LLMOps with CI/CD pipelines and workflow orchestration tools.
- The future of LLMOps: adaptive evaluation, self-monitoring models, and agentic systems.
- Action workshop: designing a complete LLMOps strategy for your organization.

Individual Impact

- Gain a comprehensive understanding of LLMOps principles and best practices.
- Build confidence in evaluating, monitoring, and optimizing LLM applications.
- Strengthen analytical and operational decision-making for AI projects.
- Learn how to manage AI system costs while maintaining high performance.
- Develop leadership in building scalable and responsible AI infrastructure.

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A graphic of a chessboard with several chess pieces. A large gold king piece is in the foreground, with a silver pawn and a silver knight behind it. The board is checkered, and there are concentric circles in the background.

Work Impact

- Improve reliability and transparency of deployed LLM systems.
- Strengthen governance, safety, and auditability of AI applications.
- Reduce operating costs and resource inefficiencies in LLM workflows.
- Enhance collaboration between data science, engineering, and product teams.
- Support sustainable AI innovation through structured operational excellence.

Training Methodology

This program combines technical learning, hands-on experimentation, and strategic implementation frameworks to ensure applied understanding.

Learning methods include:

- Real-world case studies from enterprises managing LLM deployments.
- Practical labs using tools like LangChain, TruLens, OpenAI Evals, and Weights & Biases.
- Simulation exercises for performance monitoring and cost optimization.
- Group discussions on governance and continuous improvement.
- Templates and toolkits for LLMOps dashboards and evaluation frameworks.

Beyond the Course

Upon completion, participants will be equipped to design and implement robust LLMOps systems that ensure model accuracy, compliance, and efficiency.

They will leave ready to lead the deployment of scalable, transparent, and cost-effective LLM solutions — turning AI from experimentation into measurable business value.

A graphic of a chessboard with several chess pieces, including a king and pawns, positioned on the board. The board is checkered and has a subtle grid pattern.

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