

Applied AI Engineering

Part-Time Online classes



nVIDIA®

Introduction

Learn to build and deploy production-ready AI applications using Large Language Models (LLMs), AI agents, RAG systems, and modern AI engineering frameworks. Through hands-on projects, you'll gain the skills to design, integrate, and manage AI systems for real-world business use cases. Ideal for software engineers and data professionals looking to transition into AI engineering roles and prepare for NVIDIA's Generative AI certification.

Why Study AI Engineering?

Moringa provides a specialised, career-accelerating environment where you master the complex architectures required to deploy AI at scale.

1

Join an established community of experienced software engineers and data scientists.

2

Access high-level technical upskilling through 100% online evening sessions designed to fit your work schedule.

3

Master the full AI lifecycle using Docker, CI/CD, and LLMOps to deploy scalable, production-ready systems.

4

Architect autonomous agentic workflows and multi-agent coordination patterns using LangChain and LlamaIndex.

5

Earn global credibility with structured preparation for the NVIDIA-Certified Associate (NCA-GENL) exam.

6

Build a high-impact portfolio grounded in real-world Kenyan use cases and local data compliance.

Why Study At Moringa?

Moringa is one of the most successful tech boot camps in Africa. Join us and get top-tier learning & student experience.

- Practical hands-on learning
- Access to industry-relevant labs & projects
- Dedicated Technical mentor support
- Graduates earn a certificate upon completion of the course
- Access to industry networks through tech events, networking forums and the alumni community

Who is this course for?

This course is designed for working software engineers and data scientists with 2-5 years of experience who want to transition into AI engineering roles.

Who is this course NOT for?

This course is not intended for:

- ❖ Absolute beginners with no coding or Python experience.
- ❖ Senior AI researchers seeking deep theoretical or academic knowledge.
- ❖ Learners whose primary goal is certification-only training without practical application.

What are the course prerequisites?



Intermediate Python skills (functions, classes, APIs, basic testing, and debugging).



Basic understanding of APIs and cloud platforms



55% or higher score on a 15-question quiz covering Python, software engineering foundations, Git/version control, ML basics, and APIs.

Course Details

Part-Time Online Classes

Course Duration - 14 weeks

Mode of learning - Part-Time Online Classes

Training Delivery - 100% Online Classes | Mondays, Tuesdays, Thursdays (6 pm to 9 pm E.A.T) | 6 Hours Weekly
Independent Lab & Project Work.

Tuition Fees - Ksh 150,000 (includes \$125 NVIDIA Exam fee)

Fee Payment Options Available



Course Outline

Orientation & Onboarding

- ✔ Course Overview
- ✔ System configurations and installations
- ✔ Onboarding

Module 1: Foundations of AI Engineering

Apply AI engineering concepts and work with LLMs to solve real-world problems.

Week 1: Introduction to AI Engineering and LLMs– AI Engineering vs. Data Science, Model Trade-offs (Open-source vs. Proprietary), Prompt Engineering, Python integration, Kenyan Use Cases (Healthcare/Finance).

Week 2: AI Frameworks and Tools – LangChain & LlamaIndex, Agent Architecture (Planning/Reasoning), Tool Calling, Multi-agent Patterns, MCP (Model Context Protocol), Git Workflows.

Week 3: Model Evaluation, Monitoring, and Observability – Metrics (BLEU/ROUGE/F1), Monitoring Data/Model Drift, Cost Observability (TCO/Token tracking), Prometheus, Grafana, Evidently AI.

Module 2: Model Adaptation & System Integration

Build production MCP servers to turn enterprise data into actionable protocol primitives for agentic AI systems.

Week 4: Fine-Tuning LLMs – Dataset curation, Hugging Face Trainer, Nebius AI Studio, PyTorch, LLaMA/Mistral Fine-tuning, Transfer Learning, Agricultural Advisory Case Study.

Week 5: Multimodal AI Systems – Multimodal Models (CLIP/DALL-E/Whisper), Image Captioning, Audio-to-Text, Cross-modal Retrieval, Gradio Interfaces.

Week 6: API Integration, Microservices, and MCP Servers – Secure backends with FastAPI & Docker, MCP SDK (Servers/Clients), Kubernetes, State & Memory Management, Version Control for AI.

Health & Wellness Break

Course Outline

Module 3: Deployment, Optimization & LLMOps

Implement LLMOps for continuous deployment and security while ensuring performance and cost efficiency.

Week 8: Deploying LLMs-Based Applications at Scale – Performance and Cost Optimisation – Model Quantisation & Pruning, Serverless Architecture (Azure/AWS), Cost Modelling (TCO), Caching, Batching, Autoscaling.

Week 9: LLMOps and Continuous Integration – CI/CD Pipelines (GitHub Actions/Azure DevOps), Prompt & Config Versioning, Automated Regression Testing, A/B Testing, MLflow.

Week 10: AI Security and Compliance – Model Poisoning, Adversarial Attacks, Kenya Data Protection Act, GDPR for AI, Key Management (KMS/Vault).

Health & Wellness Break

Module 4: Capstone – From Prototype to Production

Design, develop, and deploy a comprehensive, production-grade AI solution for a real organisational problem.

Week 12: Advanced Multimodal AI – Vision-Language Models, Audio-Text Integration, Stable Diffusion, Multimodal Bias, Kenyan Retail Analytics.

Week 13: Capstone Development, Finalisation, and Testing – Scalable & Secure Implementation, Agile Sprint Planning, Functionality & Performance Testing, Technical Documentation.

Week 14: Capstone Presentation & Certification Prep – Industry Pitch & Q&A, NVIDIA (NCA-GENL) Blueprint Review, Timed Practice Exams, Certification Sitting.

Final Capstone Project & Certification Prep

Design and deploy a production-ready AI solution addressing real-world challenges in healthcare, logistics, or retail. Projects are grounded in real Kenyan organizational use cases and may be industry-sponsored to meet professional workplace expectations.

Contact Details



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