Faysal Aziz

Generative AI

Two day Intermediate - Advanced course

FA-0226 · Two day

Agentic & Generative AI · Software Development

Introduction

In today's fast-paced technological environment, Generative AI is not merely an academic curiosity—it's a pivotal force driving innovation across sectors. To truly capitalize on this transformative technology, a deeper, hands-on understanding is essential. This two-day, advanced training program is designed to impart such expertise, aimed at mid and senior-level managers who already have a grounding in AI fundamentals. Adding gravitas to the training is the fact that our trainers hail from an industrial background, bringing a wealth of practical experience to the table. They have been involved in developing cutting-edge AI solutions across various industries, including high-stakes sectors like Defence. This program offers a balanced blend of theoretical foundations, Python-based coding exercises, and advanced strategies in prompt engineering. Attendees will gain actionable insights and hands-on skills to not only understand but also lead and implement Generative AI initiatives within their organizations.

Learning outcomes

- Gain a thorough technical understanding of the algorithms behind Generative AI.
- Learn to implement basic Generative Adversarial Networks (GANs) and other generative models in Python.
- Master the art of prompt engineering for optimized human-AI interaction.
- Understand the far-reaching applications of Generative AI across various domains.
- Develop a framework to assess the risks, ethics, and strategic fit of Generative AI projects.
- Engage in meaningful, informed conversations about integrating Generative AI into organizational strategy.

Prerequisites

- Intermediate-level understanding of Artificial Intelligence concepts.

- Basic Python programming skills.
- Familiarity with machine learning algorithms and data science principles.
- Prior experience with any form of AI or ML would be beneficial but not mandatory.

Training outline

1. Day 1

Deep Dive into the World of AI

1. AI paradigms: Supervised, Unsupervised, and Reinforcement Learning.
2. The evolution and types of Generative Models.

Technical Overview of Generative Algorithms

1. Mathematics behind generative models.
2. Introduction to GANs, VAEs, and Transformer-based models like GPT.

Coding Session: Implementing Basic GANs

1. Setting up the Python environment.
2. Building a simple GAN using TensorFlow/Keras.
3. Hands-on exercise: Generating synthetic data.

Generative AI in Business Applications

1. Media and Content Creation: Automated journalism, deepfakes.
2. Healthcare: Drug discovery and medical imaging.
3. Finance: Portfolio optimization and fraud detection.

Prompt Engineering Basics

1. Introduction to prompt engineering.
2. Importance in conversational AI and content generation.

Coding Session: Prompt Engineering with GPT-3

1. Setting up OpenAI's GPT API.

2. Practical exercises on fine-tuning and tailoring prompts.

2. Day 2

Advanced Technical Considerations

1. Scalability and computational costs.
2. Training data requirements and preprocessing.

Ethical Implications and Risk Management

1. Ethical dilemmas: Bias, misinformation, and deepfakes.
2. Risk assessment frameworks for Generative AI projects.

Advanced Prompt Engineering

1. Techniques for nuanced and context-aware prompting.
2. Case studies and exercises in effective prompt design.

Coding Session: Advanced Generative Models

1. Building conditional GANs and style-transfer models.
2. Hands-on exercise: Image-to-Image translation or text-based style transfer.

Strategic Planning and Roadmaps

1. Assessing the organizational readiness for Generative AI adoption.
2. Planning pilot projects and full-scale implementation.

Panel Discussion and Q&A

1. Expert insights on the future of Generative AI.
2. Open floor for questions, debates, and brainstorming.

The training will feature lectures, coding sessions, and interactive panels for an enriched learning experience. The program aims to go beyond theoretical understanding, ensuring attendees gain practical skills and strategic insights into Generative AI.

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