Generative AI for Data Scientist

Duration - 8 Days / 64 Hours

Program Description

This program offers a deep dive into Generative AI, from foundational concepts to advanced applications. It covers generative models, data preparation, and cutting-edge techniques in Natural Language Processing (NLP) and image generation using deep learning. Learners will explore real-world applications of Generative AI, understand ethical considerations, and learn about scaling, deployment, and model fine-tuning to ensure effective, explainable AI solutions.

Learning Goals

- Understand the fundamentals of Generative AI and various generative models.
- Prepare data effectively for training and fine-tuning generative AI models.
- Gain expertise in advanced NLP using transformers and explore deep learning techniques for image generation.
- Apply generative AI in real-world scenarios across various industries.
- Address the ethical and explainability challenges associated with AI systems.
- Learn best practices for scaling, deploying, and evaluating generative AI models.

Course Topics

- Introduction to Generative AI
- Generative Models Overview
- Data Preparation for Generative AI
- Advanced NLP with Transformers
- Deep Learning for Image Generation
- Generative AI in Real-World Applications
- Explainability and Ethical AI
- Scaling and Deployment
- Model Evaluation and Fine-Tuning

Gen AI for Developer

Duration - 03 Days / 24 Hours

Program Description

This program equips developers with the foundational and advanced concepts of Generative AI, enabling them to build, fine-tune, and deploy AI-driven applications effectively. Participants will explore generative models, transformers, Variational Autoencoders (VAEs), and Generative Adversarial Networks (GANs). The course delves into essential topics like retrieval-augmented generation (RAG), prompt engineering, ethical considerations, and explainable AI techniques. Additionally, it covers practical applications such as fraud detection, domain-specific fine-tuning, and addressing deployment challenges, monitoring, and maintenance of AI systems.

Learning Goals

- Learn the fundamentals and working principles of generative AI models.
- Gain insights into transformer-based architectures and their role in modern AI.
- Understand the mechanisms behind VAEs and GANs for data generation.
- Design effective prompts to optimize AI-generated outputs.
- Understand how RAG enhances generative AI capabilities.
- Utilize generative models to detect and prevent fraudulent activities.
- Adapt pre-trained models to specialized domains for improved accuracy.
- Recognize and mitigate bias, fairness, and responsibility issues in AI.
- Learn best practices for deploying generative AI models at scale.
- Implement robust monitoring and maintenance strategies for AI applications.
- Enhance model transparency and interpretability for better trust and accountability

Course Topics

- Introduction to Generative Models
- Introduction to Transformers
- Variational Autoencoders (VAEs)
- Introduction to Generative Adversarial Networks (GANs)
- Introduction to Prompt Engineering
- What is RAG (Retrieval Augmented Generation)
- Fraud Detection Using Generative Models.
- Fine Tune existing LLMs on Domain documents
- Ethical Considerations
- Deployment Challenges
- Monitoring and Maintenance
- Explainable AI techniques