

Advanced Generative AI for Data Analysts – 20 Hours

Course description

Building upon foundational knowledge, this advanced course dives into the technical and applied aspects of Generative AI for Data Analysts. Participants will explore advanced prompt engineering strategies, fine-tuning and customization of GenAI models, and practical workflows for integrating Generative AI into analytics pipelines. The course emphasizes real-world scenarios and hands-on exercises to help analysts operationalize GenAI for day-to-day analysis, automation, and advanced predictive use cases.

Note: Tools and technologies may change due to the rapid evolution of the Generative AI ecosystem.

What Participants Gain?

By the end of the course, participants will be able to design and iterate advanced prompts, including dynamic prompting patterns for adaptive analytical workflows. They will customize and fine-tune Generative AI models using OpenAI APIs and Hugging Face and build domain-specific language models for analytics use cases. Participants will automate routine analyst tasks using GenAI frameworks such as LangChain, integrate GenAI into predictive analytics workflows and AutoML pipelines, and apply advanced GenAI techniques to data visualization, deep analysis, and storytelling. Graduates will also understand ethical considerations in advanced AI automation and apply best practices for embedding and scaling GenAI workflows within organizational analytics ecosystems.

Target Audience:

- Mid-level to senior Data Analysts
- BI professionals seeking advanced GenAI capabilities
- Data Analysts who completed a basic Generative AI course or have equivalent knowledge
- Data professionals integrating GenAI into end-to-end analytics pipelines
- Analysts involved in predictive analytics and AutoML initiatives
- Data leaders supporting AI adoption in analytics teams

Prerequisites

- Completion of a basic Generative AI course or equivalent hands-on experience
- Solid experience in data analysis and BI
- Familiarity with APIs and basic automation concepts
- No prior model fine-tuning experience is required

Course Contents:

Module 1: Advanced Prompt Engineering

- Advanced strategies for building and iterating prompts.
- Leveraging dynamic prompts for adaptive querying.
- Use-cases: advanced summarizations and creative problem-solving.

Module 2: Fine-Tuning and Customizing GenAI Models

- Basics of fine-tuning GenAI models using OpenAI APIs.
- Hugging Face model customization and deployment.
- Building domain-specific language models for data analysis tasks.

Module 3: Automating Analytics Workflows with AI

- Automating routine analyst tasks with GenAI tools.
- Exploring LangChain and building GenAI-driven automation workflows.

Module 4: GenAI in Advanced Predictive Modeling

- Using GenAI models to enhance predictive analytics.
- Integrating AutoML and personalized GenAI models for predictions.

Module 5: Advanced Use-Cases and Ethical Challenges

- Advanced use-cases in data visualization, deep analysis, and storytelling.
- Ethical considerations in advanced AI automation.

Module 6: Integration into Business Ecosystems

- Embedding GenAI workflows into organizational analytics ecosystems.
- Best practices for scaling AI adoption in a collaborative setting.