

Agentic AI & GenAI: Course Overview

This comprehensive course is designed for AI enthusiasts and professionals eager to master Agentic AI and Natural Language Processing (NLP). Through a blend of theory and hands-on practice, participants will explore intelligent agent design, advanced NLP techniques, generative AI (GenAI), and state-of-the-art frameworks such as LangChain, LangFlow, and AWS services. The curriculum is structured to guide learners from foundational concepts to the deployment and monitoring of sophisticated AI applications, ensuring proficiency in building, deploying, and optimizing agentic and generative AI systems.

The following document outlines the course structure, learning objectives, prerequisites, and a detailed breakdown of each module, culminating in practical projects and cloud deployment strategies.



This 5-month hands-on workshop is designed to turn you into a practitioner of **Generative AI and Agentic Systems**, even if you're starting from scratch.

You'll learn to:

- **Design and build GenAI-powered agents** that can reason, plan, and collaborate autonomously across tasks.
- Apply **popular agent design patterns** like **ReAct**, **Chain of Thought (CoT)**, **Toolformer**, and **multi-agent collaboration**.
- Work with leading **frameworks** such as **LangChain**, **LangGraph**, and **LangSmith** to build modular, debuggable GenAI workflows.
- Master **Retrieval-Augmented Generation (RAG)** for grounding LLMs in enterprise and domain-specific knowledge.
- Learn to deploy **task-specific AI agents** that integrate tools, APIs, and memory to solve real-world business and automation problems.
- Implement robust **monitoring, observability, and evaluation** for GenAI applications using tools like **LangWatch**, **Traceloop**, and **PromptLayer**.
- Take your models from experimentation to production using best practices in **prompt engineering**, **chaining**, and **deployment pipelines**.

The focus is not just on theory 3 you'll walk away with real-world AI projects, ready to showcase or deploy.

Who Can Apply

We **welcome learners from all backgrounds**, including those **without a formal tech or AI foundation**.

If you're curious, motivated, and willing to commit, **you absolutely belong here**.

Still unsure or want to talk?

Don't hesitate to reach out at info@ethiantech.com and we will connect with you soon.



Foundations of Agentic AI

The initial modules introduce the fundamentals of Agentic AI, clarifying what constitutes an agent and how agentic systems differ from traditional AI agents and generative AI. The curriculum covers the significance of multi-agent systems in complex problem solving, automation, and decision-making. Learners will gain an overview of key frameworks that enable the creation, management, and orchestration of intelligent agents, setting the stage for advanced applications.

- What is Agentic AI?
- Differences between Agentic AI, AI Agents, and Generative AI
- Role of Multi-Agents in Problem Solving
- Overview of Agentic AI Frameworks

Agentic AI Frameworks: Phi Data and LangChain

The course delves into Phi Data, a robust framework for building agentic AI systems. Participants will learn to integrate agents with diverse models, tools, and knowledge sources, employing chunking, vector databases, and embedding techniques for efficient data processing and retrieval. Real-world use cases, such as web search and financial agents, illustrate practical applications.

The LangChain module introduces a framework that streamlines the creation of complex AI applications using large language models (LLMs). Learners will master data ingestion, document loading, text splitting, and embedding integration with vector storage systems like FAISS and ChromaDB. By the end, students will be adept at structuring, processing, and storing data within LangChain for advanced AI models and agents.

Phi Data Topics

- Agent Integration
- Chunking & Storage
- Vector Databases & Embeddings
- Workflow Design
- Use Cases: Web, Finance, RAG Agents

LangChain Topics

- Core Components
- Data Ingestion & Loaders
- Text Splitting Techniques
- Embeddings: OpenAI, Hugging Face, Ollama
- Vector Storage: FAISS, ChromaDB

Advanced Agentic AI: LCEL, LangServe, and LangGraph

Building on foundational frameworks, the course explores LangChain Expression Language (LCEL) for efficient LLM workflows, including prompt and output chain creation and deployment of LangServe runnables as APIs. The LangServe module focuses on deploying and scaling AI models in production, covering environment setup, API-driven model serving, and integration with external tools.

The LangGraph module introduces advanced workflow management, emphasizing state management, deployment strategies, and message handling. Learners will understand how to structure and manage state within LangGraph applications, enabling the development of scalable, robust AI systems.

LCEL

Build and deploy LLMs, create prompt/output chains, and deploy APIs with LangServe.

LangServe

Efficient model serving, environment setup, and API-driven deployment for production AI.

LangGraph

Advanced workflow and state management, deployment strategies, and message handling.

Human-in-the-Loop, Agentic RAG, and Multi-Agent Systems

The curriculum advances into human-in-the-loop workflows using LangGraph, where learners integrate human feedback to optimize AI outputs and user experience. The Agentic Retrieval-Augmented Generation (RAG) module teaches how agents autonomously retrieve and generate information, enhancing performance in complex tasks.

The design of multi-agent systems is covered in depth, focusing on agent communication, collaboration, and coordination within LangGraph. The CrewAI platform is introduced as a solution for managing AI teams, automating workflows, and optimizing collaborative decision-making across multiple agents.

Human-in-the-Loop

- Feedback Integration
- Dynamic Breakpoints
- Time Travel

Agentic RAG

- Adaptive RAG Techniques
- Local & Cohere Variants
- Self RAG with VectorDB

Multi-Agent Systems

- Agent Nodes & Roles
- Communication Protocols
- CrewAI Collaboration

LangFlow, Observability, and Model Monitoring

The course introduces LangFlow for managing AI-driven workflows, covering setup, UI, and integration with LangChain. Learners will build applications using nodes, chains, and pre-built or custom workflows, and explore prompt engineering within LangFlow.

Observability is addressed through Langfuse and LangWatch, tools for tracking and monitoring LLM performance. Participants will learn to integrate Langfuse for monitoring outputs, analyzing system performance, and optimizing LLMs. LangWatch provides real-time metrics and insights into AI model health, supporting reliable system operation through effective monitoring strategies.

LangFlow

- Workflow Management
- UI & Terminologies
- Prompt Engineering

Langfuse

- LLM Observability
- Integration & Monitoring
- Key Metrics Tracking

LangWatch

- Real-Time Monitoring
- API Integration
- System Health Insights

End-to-End Projects and Cloud Deployment with AWS

The final modules guide learners through building, deploying, and optimizing end-to-end agentic AI projects. Participants will apply their knowledge to real-world tasks, incorporating data retrieval, processing, and decision-making within unified AI systems.

The course covers AWS Cloud services for generative AI, including EC2, S3, SageMaker, and Lambda. Learners will explore AWS Bedrock for foundation models, SageMaker for end-to-end ML development, Lambda for serverless compute, and API Gateway for scalable API management. These modules ensure proficiency in deploying, managing, and scaling AI applications in cloud environments.

AWS Cloud & Bedrock

- EC2, S3, SageMaker, Lambda
- Bedrock for Foundation Models
- Model Deployment & Inference

Serverless & API Management

- Lambda Functions
- API Gateway Integration
- Efficient API Development

Project-Based Learning

- End-to-End Agentic AI Projects
- Unified Data Processing
- Optimization & Monitoring



Who Is This Program For?

This program is meticulously crafted for ambitious professionals who are not content with superficial knowledge of AI. It targets individuals who are serious about making a tangible impact and riding the "AI wave" to elevate their careers.

Beyond Theory

If you've found other data science or AI courses to be overly academic and lacking practical application, this program is for you. We focus on "doing" rather than just "knowing."

Real-World Impact

For professionals who want to build AI applications and workflows that are directly relevant to today's industry needs and solve actual business problems.

Career Elevators

Individuals seeking to significantly advance their careers by gaining cutting-edge AI skills and a robust portfolio that stands out to hiring managers.

This cohort is specifically designed for those ready to commit to intensive learning and practical application, transforming their understanding of AI into tangible, career-boosting assets.

Key Outcomes and Support

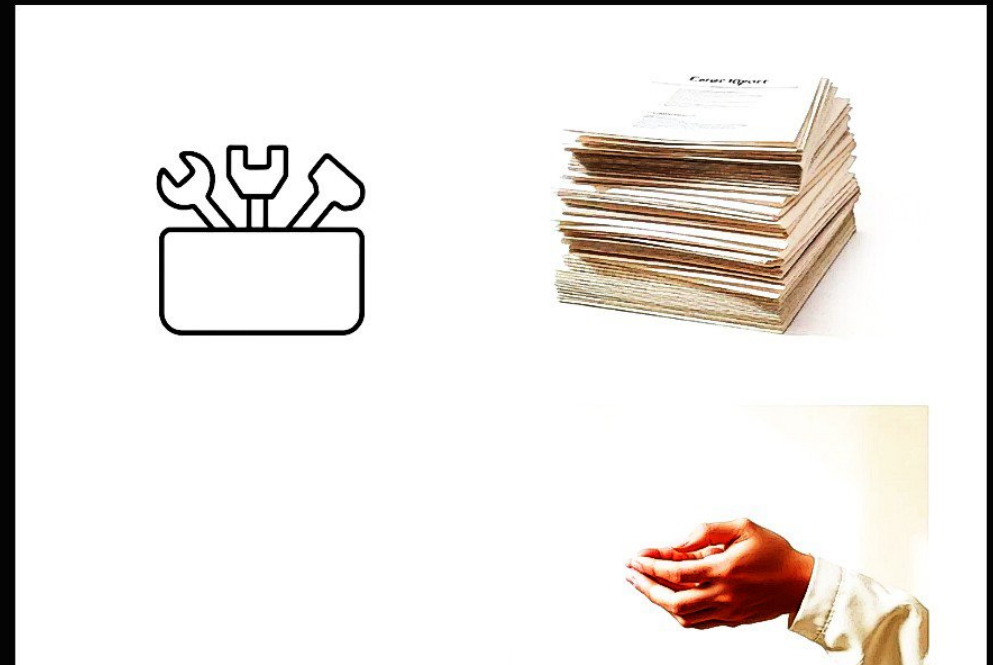
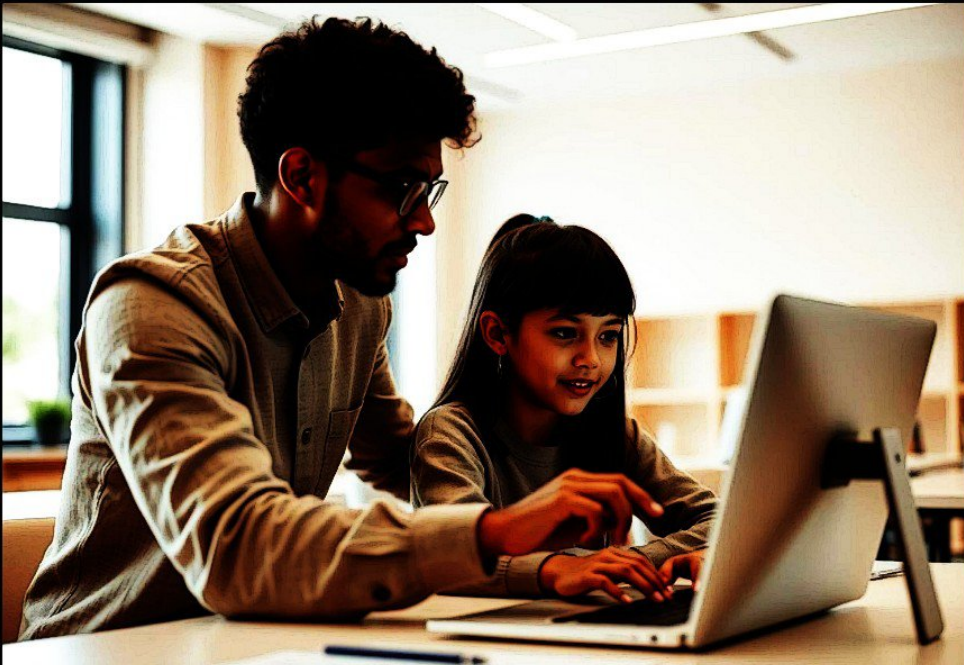
Beyond the core learning and project building, this program offers a robust ecosystem of support designed to ensure your success and career advancement.

Live Doubt-Clearing & Mentorship

Receive direct, personalized support from industry experts. Our live sessions provide immediate clarification on complex topics and offer guidance on your projects, ensuring you overcome challenges efficiently. This mentorship goes beyond simple Q&A, offering insights from experienced AI practitioners.

Career Support Toolkit

Gain access to a comprehensive suite of resources designed to jumpstart your job search. This includes resume templates optimized for AI roles, interview preparation guides, and strategies for leveraging your new portfolio on platforms like GitHub and LinkedIn. We equip you with the tools to confidently navigate the AI job market.



The goal is to not only impart knowledge but to empower you with the confidence and resources to successfully transition into or advance within AI-centric roles.

Certification and Recognition

Upon successful completion of the program, you will earn a valuable credential that signifies your mastery of real-world AI application development.



Shareable Certificate

Receive an official certificate of completion, suitable for sharing on LinkedIn, your personal website, or with potential employers. This certificate validates your participation and successful mastery of the program's rigorous curriculum.

This certificate, combined with your extensive project portfolio, will significantly enhance your professional profile and open doors to new opportunities in the AI domain.



Industry Recognition

The projects you build and the skills you acquire are designed to align with current industry demands, making your certification a recognized mark of practical AI competence.

Our Expectations: Your Commitment to Growth

To ensure a productive and enriching learning environment for everyone, we have certain expectations from our participants. Your commitment is crucial to your success and the success of the cohort as a whole.

A Curious Mindset

Approach every challenge with curiosity and a desire to understand "why" and "how." This drives deeper learning and innovation.

Willingness to Learn & Work Hard & Smart

Be prepared for rigorous work, but also learn to optimize your efforts for maximum impact. Efficiency is key in AI development.

Active Participation

Engage actively in discussions, live sessions, and collaborative projects. Your contributions enrich the learning experience for all.

Openness to Feedback & Growth

Embrace constructive criticism as an opportunity to refine your skills and accelerate your personal and professional development.

We believe that a proactive and engaged participant reaps the greatest rewards from this intensive program.

Refund and Deferral Policy

We understand that circumstances can change. Our clear and fair refund and deferral policy is designed to provide you with peace of mind.

100% Refund within 10 Days

You are eligible for a full refund if requested within 10 days from the first class, specifically the "Meet & Greet" session. This policy allows you to experience the initial phase of the program risk-free and ensure it's the right fit for your career goals. No questions will be asked; your satisfaction is our priority.

Detailed Policies Available

For comprehensive information regarding our refund and deferral options, including specific conditions and procedures for deferring your enrollment to a future cohort, please refer to the detailed policy document on our official website. We encourage you to review this document thoroughly to understand all terms and conditions.

