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ACADEMY

Agentic AI Training Course

CURRICULUM

Module I – Foundations of Agentic AI

- What is Agentic AI?
- Evolution from Prompt-based to Agent-based systems
- Differences between AI Assistants vs. Agents vs. Autonomous Systems
- Basic Architecture of Agentic AI: LLM + Memory + Tools + Planning
- Characteristics of Agents: Autonomy, Goal-setting, Reasoning
- Reactive vs. Proactive Agents
- Key capabilities: Tool use, long-term memory, task decomposition
- Comparison: AutoGPT, BabyAGI, LangChain Agents
- Introduction to agentic reasoning (ReAct, MRKL, Plan-and-Execute)
- Limitations, risks, and ethics of autonomous agents

Module II – LangChain Fundamentals For Agentic Systems

- Introduction to LangChain ecosystem
- LangChain Components: Chains, Tools, Agents, Memory
- LLM wrappers and prompt templates
- LangChain Agents: Simple vs. Multi-step agents
- Tool usage with Agents (Google Search, Python REPL, API calls)
- Memory types: Buffer, Summary, VectorStore, ConversationSummaryMemory
- Output Parsers and Intermediate Steps
- Handling long conversations and context windows
- Decision-making flows in LangChain
- Using LangChain Expression Language (LCEL)

Module III – OpenAI Function Calling and Tool Use

- Introduction to OpenAI Function Calling (GPT-4 & Tools API)
- Designing structured functions for tool usage
- JSON schema, argument parsing, function routing
- Comparison: LangChain Tools vs. OpenAI Tools vs. ReAct
- Calling APIs like weather, calculator, search with LLM
- Multi-function invocation
- Tool selection strategies and error handling
- Introduction to OpenAI Assistants API
- Using tools within context and chaining multiple calls
- Common tool-using LLM applications: Retrieval, Execution, Summarization

Module IV – Planning and Reasoning Techniques in Agents

- Overview of reasoning strategies in LLMs
- ReAct (Reasoning + Acting) pattern
- Plan-and-Execute architecture (LangChain, Meta's implementation)
- Task decomposition with LLMs
- Using LLMs for planning tasks (To-do lists, workflows, subtasks)
- Handling intermediate outputs, tool feedback
- Agent decision flow: IF-THEN conditions, tool selection, fallback logic
- Integrating external APIs and knowledge bases
- Multi-agent orchestration and communication
- Limitations of LLM-based reasoning (hallucinations, context loss)

Module V – Memory, Retrieval-Augmented Agents & Context Management

- Types of memory in Agentic AI
- LangChain Memory integration with Agents
- Vector Stores: FAISS, Chroma, Pinecone
- Creating and using custom knowledge bases
- Retrieval-Augmented Generation (RAG) principles
- Agent memory vs. episodic memory vs. semantic memory
- Context window optimization (chunking, summarizing, pruning)
- Embeddings and retrieval flow
- Integration with PDFs, docs, and chat history
- Managing memory across multi-step tasks

Module VI – Autonomous and Multi-Agent Systems

- What are autonomous agents?
- BabyAGI and AutoGPT architecture and workflows
- Task creation, prioritization, and execution loop
- Feedback-driven planning and goal refinement
- Limitations of open-loop and infinite-loop agents
- Multi-agent systems: collaboration and coordination
- Agent-Swarm frameworks (CAMEL, CrewAI, OpenAgents)
- Distributed reasoning across agents
- Multi-role agents (Planner, Executor, Critic, Researcher)
- Agent chaining vs. Agent collaboration

Module VII – Agent Deployment, Evaluation, and Observability

- Agent lifecycle: from design to deployment
- Streamlit + LangChain-based interfaces
- Gradio, FastAPI, Flask for building frontends
- Logging, monitoring, and debugging agents
- Guardrails and safety in agent responses
- Evaluation metrics for agentic systems: task completion, correctness
- Structured logging: LangSmith, PromptLayer
- Managing latency, retries, API rate limits
- User feedback integration and continual improvement
- Role of human-in-the-loop in monitoring agents

Module VIII – Industry Applications, Tools, and Future of Agentic AI

- Use cases in domains: Personal assistants, customer support, research, coding, automation
- Comparison of agent frameworks: LangChain vs. AutoGPT vs. CrewAI vs. OpenAgents
- Open-source vs. closed-source agent platforms
- Introduction to emerging agentic AI tools (Flowise, SuperAgent, MetaGPT)
- Microsoft AutoGen, ChatDev: Role-based agent teams
- AI-first automation tools (Zapier AI, Relevance AI, TaskWeaver)
- Limitations and risks: autonomy, misuse, hallucinations
- Ethical and regulatory concerns around autonomous agents
- Trends in embodied AI and robotics agents
- Future of Agentic AI and LLMs as reasoning machines

Agentic AI Training Course

Schedule

Duration

2 Months

(8 Weeks)

Training Schedule

Weekdays Training

Monday to Friday

Weekend Training

Saturday & Sunday

Daily / Weekly Session

Live Online Instructor Led Session



Agentic AI Training Course Fee

Limited Time Offer

Currency	Code	Offer Price	Regular Price
US dollar	USD	450	~~650~~
Canadian dollar	CAD	620	~~820~~
Australian dollar	AUD	700	~~900~~
Sterling pound	GBP	360	~~560~~
New Zealand dollar	NZD	780	~~980~~
Indian rupee	INR	35,000	~~55,000~~

- Fee is inclusive of all applicable taxes and include examination and certification fee.
- No other hidden charges of any type.

Thank You!

Thank you for downloading our curriculum! We're excited to be part of your learning journey. Feel free to reach out if you need more information.

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