

ZYTRIX TRAINING

Build your skills for a Brighter Future

ADVANCED AGENTIC AI ENGINEERING

Comprehensive 2-Month Online Certification Program

DURATION & FORMAT 2 Months (8 Weeks) 100% Online Live Classes & Labs	PREREQUISITES Python Proficiency Basic REST APIs & LLM Basics	CAREER BENEFITS Placement Assistance Offered Hands-on Capstone Projects
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CORE TOOLS & FRAMEWORKS COVERED

- **Agentic Frameworks:** LangChain, LangGraph, CrewAI, AutoGen (AG2), LlamaIndex, Model Context Protocol (MCP), LiteLLM
- **Vector Stores & Memory:** Pinecone, Qdrant, ChromaDB, Redis State Management
- **Observability & Evaluation:** LangSmith, Arize Phoenix, DeepEval, Guardrails AI

8-WEEK DETAILED CURRICULUM

WEEK	FOCUS MODULE	KEY CONCEPTS & FRAMEWORKS	HANDS-ON PROJECT / LAB
Week 1	Foundations of Agentic Systems	• LLMs vs Autonomous Agents • Tool Calling & ReAct pattern • Function Calling with OpenAI/Claude • Tools: LangChain Core, Pydantic, LiteLLM	Build a custom CLI tool-using agent from scratch with Pydantic validation.
Week 2	Stateful Agents & Graph Workflows	• State Machines for AI Workflows • Nodes, Edges, & Conditional Routing • Human-in-the-Loop (HITL) pause/approvals • Tools: LangGraph	Construct an Automated Support Ticket Router with human approval checkpoints.
Week 3	Role-Based Multi-Agent Teams	• Hierarchical vs. Sequential Execution • Crews, Agents, Tasks, & Processes • Short-term, Long-term, & Entity Memory • Tools: CrewAI	Build an Automated Market Research Team (Researcher, Writer, Editor agents).
Week 4	Conversational Multi-Agent Systems	• Agent-to-Agent Dialogues & Group Chats • Dynamic Task Delegation • Code Execution Sandboxes • Tools: AutoGen (AG2)	Build an Autonomous Software Dev Team (Coder, Reviewer, Debugger).
Week 5	Agentic RAG & Advanced Retrieval	• Router RAG & Query Decomposition • Corrective RAG (CRAG) & Self-RAG • Dynamic Vector + Knowledge Graphs • Tools: LlamaIndex, Qdrant, Pinecone	Build an Agentic Document Analyst capable of cross-document verification.
Week 6	Standardized Protocols (MCP) & Tools	• Anthropic Model Context Protocol (MCP) • DBs, GitHub APIs, & Web Scrapers • Custom Tool creation & Execution Safety	Build an MCP-compliant enterprise assistant connected to SQL DBs & files.

WEEK	FOCUS MODULE	KEY CONCEPTS & FRAMEWORKS	HANDS-ON PROJECT / LAB
Week 7	Evaluation, Tracing & Guardrails	- Agent Tracing, Debugging, & Costs - Trajectory Evaluation & Output Checks - Prompt Injection Defense & Safety Tools: LangSmith, DeepEval	Implement end-to-end tracing and evaluation pipelines with LangSmith.
Week 8	Capstone & Production Deployment	- Deploying Agents as REST APIs - LangServe, FastAPI & Async Queues - Docker Containerization	Capstone: Deploy an enterprise-grade autonomous AI worker for real-world use.

KEY LEARNING OUTCOMES

1. Multi-Framework Mastery Architect, build, and debug production multi-agent systems using LangChain, LangGraph, CrewAI, and AutoGen.	2. Autonomous RAG Systems Implement intelligent retrieval architectures where agents evaluate, reformulate, and self-correct queries.
3. Collaborative Agent Workflows Orchestrate role-based teams capable of autonomous task decomposition, critique, and iterative execution.	4. Enterprise Production Readiness Apply rigorous evaluation frameworks, tracing, cost monitoring, safety guardrails, and cloud deployment.

Course Fee: Rs 20,000 • Website: <https://zytrixtraining.com/> • Enrolment Open (Limited Seats)