NIELIT Virtual Academy

INTERSHIP PROSPECTUS

Name of the Internship: Online Internship in Agentic AI

Internship Code: IN34

Mode of Conduction: Online

Starting Date: 1st July 2026

Last date of registration: 28th June 2026

Duration: 8 Weeks

Objective of the Course

- ❖ Provide a strong foundation in Agentic AI concepts, architectures, and autonomous AI systems.
- ❖ Develop expertise in AI agent frameworks, prompt engineering, memory management, and tool integration.
- ❖ Provide comprehensive knowledge of Retrieval-Augmented Generation (RAG), vector databases, embeddings, and intelligent information retrieval.
- ❖ Enable learners to design, build, and orchestrate multi-agent workflows for complex task automation and decision-making.
- ❖ Provide hands-on experience in developing, deploying, and optimizing production-ready Agentic AI applications using modern frameworks and Large Language Models (LLMs).

Outcome of the Course

- ❖ Understand the core concepts, architectures, and design principles of Agentic AI systems.
- ❖ Develop intelligent AI agents using LangChain, LangGraph, embeddings, vector databases, and modern AI frameworks.

Course Fee: Rs: 1000/-(inclusive of GST)

Eligibility: Pursuing an Undergraduate level course or above

Methodology

- ✓ Teaching Mode: Self-Pace
- ✓ Access from anywhere anytime
- ✓ Content Access through e-learning portal
- ✓ Doubt Removal Session
- ✓ Covers both Theory & Practical
- ✓ Certification: On completion of the Mini Project

Registration Link: http://nva.nielit.gov.in

Contact Details:

- ✓ Course coordinator Name: Mr. Anant Tudu
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Course Structure:

Module No	Module Title
1	Foundations of Agentic AI
2	LangChain Fundamentals
3	Embeddings and Semantic Search
4	Agent Logic and Decision Making
5	Structured Outputs and Data Extraction
6	Chains, Runnables, and Workflow Orchestration
7	Retrieval-Augmented Generation (RAG)
8	LangGraph and Stateful Agents
9	Advanced Agent Workflows
10	Memory, Streaming, and Production Agents
11	Project

Syllabus:

Detailed Syllabus

Module 1: Foundations of Agentic AI

- ✓ Introduction to Agentic AI
- ✓ Evolution of AI Systems
- ✓ AI Agents vs Traditional AI Applications
- ✓ Components of an AI Agent
- ✓ Agent Architectures

Module 2: LangChain Fundamentals

- ✓ LangChain Architecture

- ✓ Models and LLM Integration
- ✓ Prompts and Prompt Templates
- ✓ Messages in LangChain
- ✓ Chat Models

Module 3: Embeddings and Semantic Search

- ✓ Introduction to Embeddings
- ✓ Text-to-Vector Conversion
- ✓ Vector Space Concepts
- ✓ Similarity Search

Module 4: Agent Logic and Decision Making

- ✓ Conditional Statements
- ✓ Loops
- ✓ Branching Logic
- ✓ Dynamic Decision Making
- ✓ Rule-Based Workflows
- ✓ Agent Execution Flow

Module 5: Structured Outputs and Data Extraction

- ✓ Structured Output Generation
- ✓ JSON Output Generation
- ✓ Output Parsing Concepts
- ✓ Built-in Output Parsers
- ✓ Custom Output Parsers

Module 6: Chains, Runnables, and Workflow Orchestration

- ✓ Introduction to Chains
- ✓ Sequential Chains
- ✓ Multi-Step Processing
- ✓ Runnable Concepts
- ✓ Runnable Types
- ✓ Runnable Sequences

Module 7: Retrieval-Augmented Generation (RAG)

- ✓ Introduction to RAG
- ✓ Why RAG is Needed
- ✓ Components of a RAG System

- ✓ Data Ingestion Pipeline
- ✓ Document Loading
- ✓ Chunking Strategies

Module 8: LangGraph and Stateful Agents

- ✓ Introduction to LangGraph
- ✓ State Management
- ✓ Nodes
- ✓ Edges
- ✓ Graph Construction

Module 9: Advanced Agent Workflows

- ✓ Workflow Design Patterns
- ✓ Loops in Agent Systems
- ✓ Human-in-the-Loop (HITL)
- ✓ Parallel Execution

Module 10: Memory, Streaming, and Production Agents

- ✓ Introduction to Memory
- ✓ Short-Term Memory
- ✓ Long-Term Memory
- ✓ Conversation Memory
- ✓ Memory Storage Techniques
- ✓ Persistent Memory Systems
- ✓ Streaming Responses

Module 11. Project

- ✓ Capstone project
- ✓ Project Report Submission