



Agentic AI with *LLMs*

- **12 Live** classes (24 hours)
- You will learn basic to advanced LLMs and AI Agents
- Real-world applications
- Project-based learning
- Assignments
- Course Certificate
- Course Fee: 4000tk/35USD

CONTACT

 www.aiquest.org
 +880 1704265972



Md. Asif Iqbal Fahim

PhD Student (GenAI-LLM) at UC Dublin, Ireland
Former AI Engineer at InfinitiBit GmbH, Germany
Former Machine Learning Engineer
Kaggle Competition Expert (x2)

[LinkedIn Link of Course Instructor!](#)

এই কোর্সটি জেনারেটিভ ও এজেন্টিক AI-র foundation থেকে শুরু করে real life প্রজেক্ট পর্যন্ত একটি হাতে-কলমে শেখার journey। আপনি শিখবেন LLM, প্রম্পট ডিজাইন, মেমোরি, টুলস, এবং LangChain, n8n, CrewAI-এর মতো ফ্রেমওয়ার্ক ব্যবহার করে কীভাবে স্মার্ট এজেন্ট তৈরি করা যায়। ক্লাসে থাকবে real উদাহরণ ও প্রজেক্ট, যা শেষ হবে একটি ক্যাপস্টোন প্রজেক্ট দিয়ে যেখানে আপনি নিজেই একটি স্বয়ংক্রিয় AI এজেন্ট তৈরি করবেন।

Let's Talk About Course Module & Planning

Class 01: The Era of Generative & Agentic AI

- What are GenAI, LLM, and Agentic AI
- Type of GenAI Models (NLP vs. Vision)
- Key building blocks: Model, Memory, Tools, Reasoning
- Real-world examples (ChatGPT, Copilot, AutoGPT, CrewAI)
- Platform Overview: Hugging Face, Kaggle Model, Ollama
- Course Roadmap Overview

Class 02: Python Essentials for AI Applications

- Functions, Classes, API calls, JSON, File Handling
- Working with External APIs (requests, JSON)
- Using Virtual Environments and Requirements.txt
- **Mini Project:** Call OpenAI or Hugging Face API

Class 03: Foundations of Large Language Models (LLMs)

- What is an LLM
- Tokenization, Embeddings,
- Transformer Vs. Other Sequence Models
- Pretraining vs. Fine-tuning vs. Instruction-tuning
- Temperature, top-p, and other Parameters

Class 04: Prompt Engineering & Function Calling

- Types of prompting: Zero-shot, Few-shot, Chain-of-thought, ReAct
- Prompt Templates & Variables
- Function Calling / Tool Invocation
- Limitations of Prompting

Class 05: Text Processing and RAG

- Embeddings: What, why, how
- Text Similarity, Cosine Distance
- Storing and Querying Vectors

- Build a Semantic Search Mini App
- Why RAG is needed (internal info, context limit, accuracy)
- Document loading, chunking, and indexing
- Query + Retrieval + Response Pipeline - ChromaDB
- Comparison: Fine-tuning vs. RAG technology
- **Project:** Building a Private Q&A Chatbot using LangChain or LlamaIndex

Assignment**

Class 06: LangChain Deep Dive (Memory, Tools & Agents)

- LangChain architecture: Chains, Tools, Agents, Memory
- PromptTemplate, LLMChain, ConversationalChain
- Types of memory (short-term, long-term, vector memory)
- Building Custom Tools
- Tool integration: Web search, calculator, Python functions
- Execution & feedback loop
- **Project:** Create a conversational agent with memory and multiple tools

Assignment**

Class 07: Multi-Agent Systems (Collaboration & CrewAI)

- Planner, Executor, Critic model
- CrewAI, AutoGen, and LangGraph overview
- Multi-role agents (researcher, summarizer, coder) with CrewAI
- Multi-Agent Orchestration and Communication with MCP Server

Project: Create a multi-agent system that collaborates on a report writing

Assignment**

Class 08: No-Code Agentic AI with n8n

- Introduction to n8n workflow automation platform
- Why no-code? (Speed, accessibility, rapid prototyping)
- n8n fundamentals:
 - Nodes, connections, and workflows
 - Triggers: Webhooks, schedules, manual execution
 - Data transformation and routing

- Integrating LLMs in n8n:
 - OpenAI, Anthropic, and other AI nodes
 - Prompt templates and variable passing
 - Chaining multiple AI operations
- Building Agentic Workflows:
 - Multi-step AI automations
 - Conditional logic and decision-making
 - Memory and context management
 - Tool integration: APIs, databases, web scraping
- Real-world Use Cases:
 - Automated customer support
 - Content generation pipeline
 - Data processing and analysis
 - Email automation with AI
- Deployment options: Cloud vs. self-hosted
- Code vs. No-Code: When to use what

Project:

- Build a Customer Support Automation Workflow
- Create an AI-powered Research and Reporting System in n8n

Assignment**

Class 10: Evaluation, Optimization & Deployment

- Evaluating LLM responses (faithfulness, coherence, relevance)
- LLM as a Judge
- Error Handling, Retries, and Self-reflection
- Logging, monitoring, and debugging strategies
- Deploy via Streamlit/ FastAPI
- Using API Keys Securely
- Performance Optimization Tips

Class 11: Multimodal Agents

- Multi-modal Agents
- Vision and Voice
- **Project:** Voice Assistant Agent Interaction with Images and Texts

Class 12: Capstone Project Showcase

- Project requirements and best practices
- Capstone Project Review and Presentation
- Peer feedback and Q&A
- Next steps for continuing learning
- Career opportunities in Agentic AI

Showcase: Learners present their own autonomous agent project

Capstone Project Ideas:

Learners choose one and build from scratch:

- Research & Summarization Agent
- Data Analysis & Visualization Agent
- Personal AI Assistant with memory
- Multi-Agent Chat System
- Auto-document reader (RAG-powered)
- n8n automation workflow (AI-powered)
- Customer support chatbot with escalation
- Content generation pipeline

Contact Details:

[Sohan Khan](#)

Course Coordinator, aiQuest Intelligence & Study Mart

Cell: +8801704265972 (Call/WhatsApp)

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