JOB READY AI COURSE WITH PYTHON, NLP, GEN-AI, RAG, AGENTIC-AI AND MLOPS

Duration- 3-4 Months

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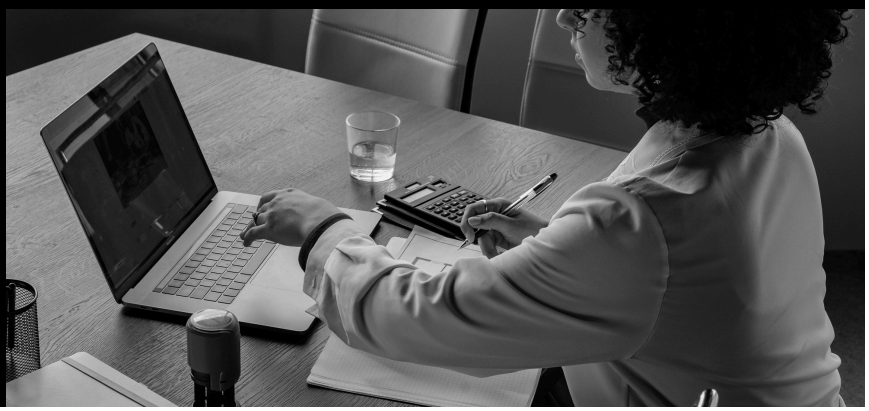
- A live project with real-time implementation
- Lots of Practical exercises
- 20 + hands on projects
- Interview Preparation
- Resume building
- Mock Interview

This course is highly curated and uniquely designed according to the latest industry standards. You will learn all the stack required to work in Artificial Intelligence with real-time industry projects.

Learn PYTHON



Python has become the dominant language for Artificial Intelligence (AI) due to its readable, English-like syntax and a vast ecosystem of pre-built libraries that allow developers to focus on solving problems rather than writing complex low-level code.

Detailed Syllabus:

1 Introduction to Python

2 Getting Started

3 Python Basics

4 Strings

5 Decision Control Instruction

6 Repetition Control Instruction

7 Console Input/output

8 Lists

9 Tuples

10 Sets

11 Dictionaries

12 Comprehensions

13 Functions

14 Recursion

15 Functional Programming

16 Modules and Packages

17 Namespaces

18 Classes and Objects

19 Intricacies of Classes and Objects

20 Inheritance in Python

21 Iterators and Generators

22 Exception Handling

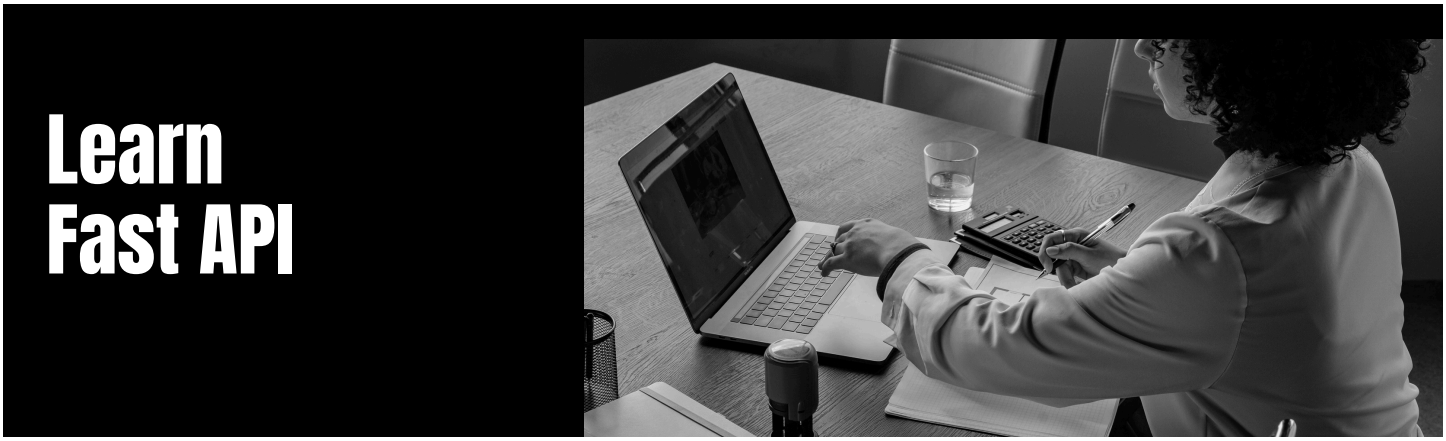
23 File Input/Output

24 Miscellany

25 Concurrency and Parallelism

26 Synchronization

We'll dive into a variety of programs for every topic! ✨



FastAPI is a modern, fast (high-performance), web framework for building APIs with Python based on standard Python type hints.

Detailed Syllabus:

1. What is an API? | Introduction to APIs

2. HTTP Methods in FastAPI

3. Path & Query Params in FastAPI

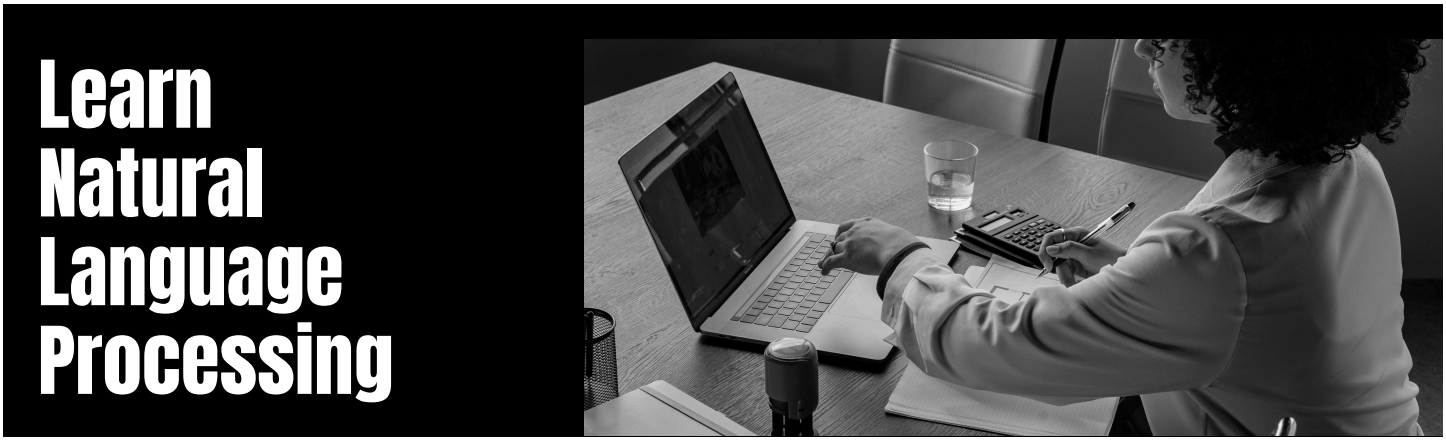
4. Pydantic Python library for data validation

5. Post, PUT, Delete Request in FastAPI

6. FastAPI + Docker

7. Deploy FASTAPI API and Postman testing

We'll dive into a variety of programs for every topic!✨



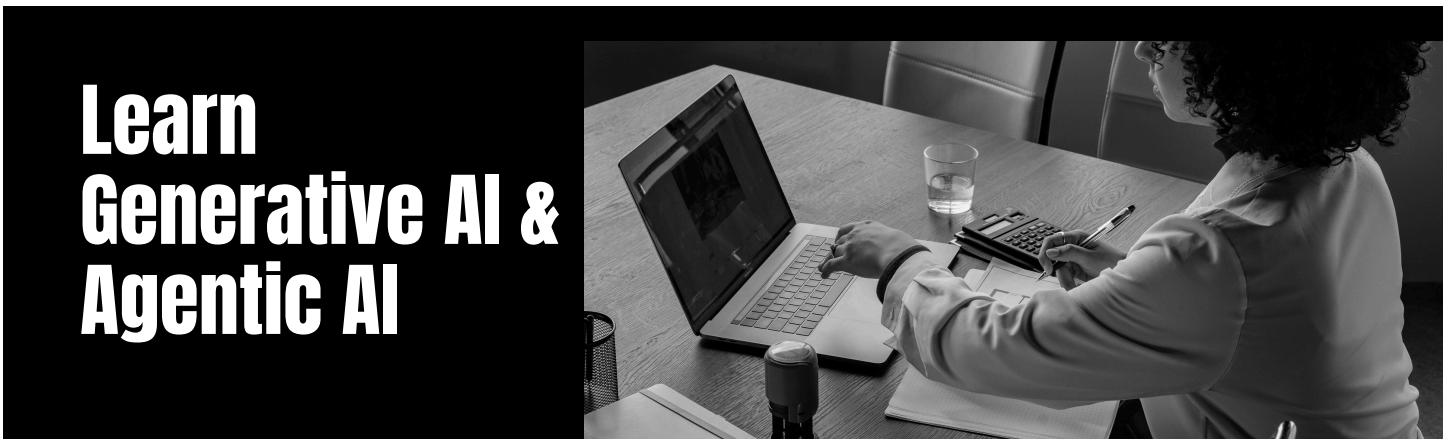
Natural language processing, or NLP, combines computational linguistics—rule-based modeling of human language—with statistical and machine learning models to enable computers and digital devices to recognize, understand and generate text and speech.

Detailed Syllabus:

1. **Introduction to NLP**
2. **End to End NLP Pipeline**
3. **Text Preprocessing Techniques**
4. **Text Representation Techniques**
5. **Word2Vec**
6. **CBOW**
7. **Skip-gram**

8. **NLP Projects**

We'll dive into a variety of programs for every topic!✨



Generative artificial intelligence (AI) is a type of AI that generates images, text, videos, and other media in response to inputted prompts.

Detailed Syllabus:

1.Introduction to Generative AI

1. **What is generative AI?**
2. **Why are generative models required?**
3. **Understanding generative models and their significance**
4. **Recent advancements and research in generative AI**
5. **Generative AI end-to-end project lifecycle**
6. **Key applications of generative models**

2.Introduction to Large Language Models

1. **Application and use cases of LLMs**
2. **Transfer learning in NLP**
3. **How to use pre-trained transformer-based models**
4. **How to perform finetuning of pre trained transformer-based models**

3.Introduction to Hugging face and its applications

1. **Why the need for a hugging face?**
2. **Introduction of Hugging Face Transformers**
3. **Hugging face API key generation**
4. **Hugging Face Transfer learning models based on the state-of-the-art transformer architecture**

4.Guide to Open AI and its Ready to Use Models with Application

1. **Introduction to OpenAI**
2. **What is OpenAI API and how to generate OpenAI API key?**
3. **Installation of OpenAI package**
4. **Experiment in the OpenAI playground**
5. **How to setup your local development environment**
6. **Different templates for prompting**
7. **OpenAI Models GPT-3.5 Turbo DALL-E 2, Whisper, Clip, Davinci and GPT-4 with practical implementation**

5.Prompt Engineering Mastering with OpenAI

1. **Introduction to Prompt Engineering**
2. **Different templates for prompting**
3. **Prompt Engineering: What & Why?**
4. **Prompt Engineering & ChatGPT Custom Instructions**
5. **The Core Elements Of A Good Prompt**
6. **Which Context Should You Add?**
7. **Zero- One- & Few-Shot Prompting**
8. **Ask-Before-Answer Prompting**
9. **Perspective Prompting**
10. **Contextual Prompting**
11. **Emotional Prompting**
12. **Laddering Prompting**
13. **Using ChatGPT For Prompting**
14. **Find Out Which Information Is Missing**
15. **Self-evaluative Prompting**

16. **ChatGPT-powered Problem Splitting**
17. **Reversing Roles**
18. **More Prompts & Finding Prompt Inspirations**
19. **Super Prompts Like CAN & DAN**

6.Vector database with Python for LLM Use Cases

1. **Introduction to vector database**
2. **Vector database foundation**
3. **Vector database use cases**
4. **Text embedding**
5. **Vector similarity search**
6. **Storing and retrieving vector data in SQLite**
7. **Chromadb local vector database part1 setup and data insertion**
8. **Query vector data**
9. **Fetch data by vector id**
10. **Database operation: create, update, retrieve, deletion, insert and update**
11. **Application in semantic search**
12. **Building AI chat agent with langchain and openai**
13. **Weviate Vector Database**
14. **Pinecone Vector Database**

7.Hands-on with LangChain (Gen-AI)

1. **Introduction to LangChain**
2. **Prompts in LangChain**
3. **Models in LangChain**
4. **Structured Output in LangChain**
5. **Output Parsers in LangChain**
6. **Chains in LangChain**
7. **Runnables in LangChain**
8. **Document Loaders in LangChain**
9. **Retriever in LangChain**
10. **Tool Calling in LangChain**
11. **Retrieval-Augmented Generation (RAG) using Langchain components**

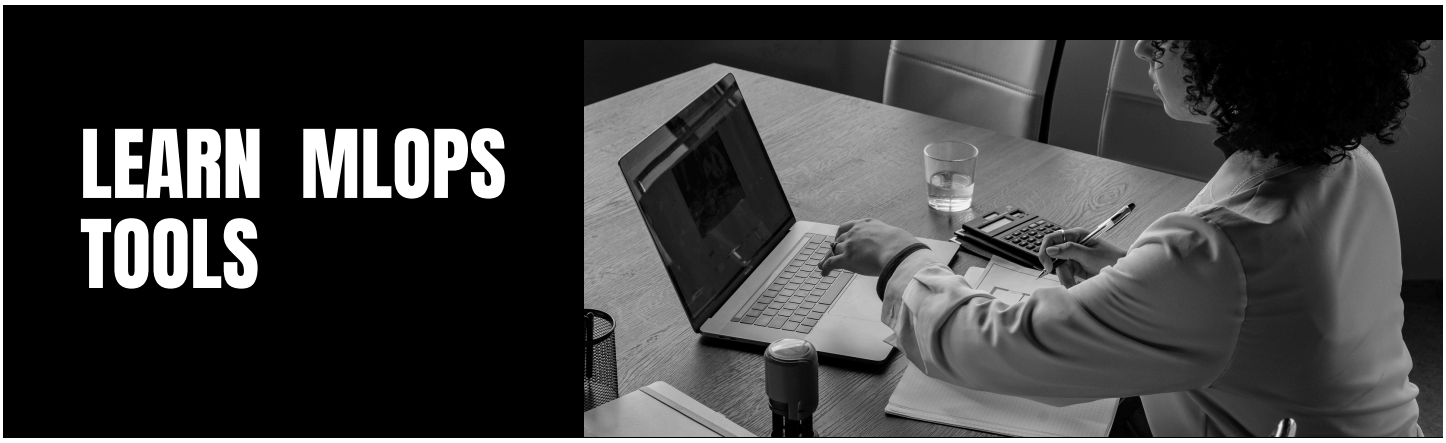
8.Hands-on with LangGraph (Agentic-AI)

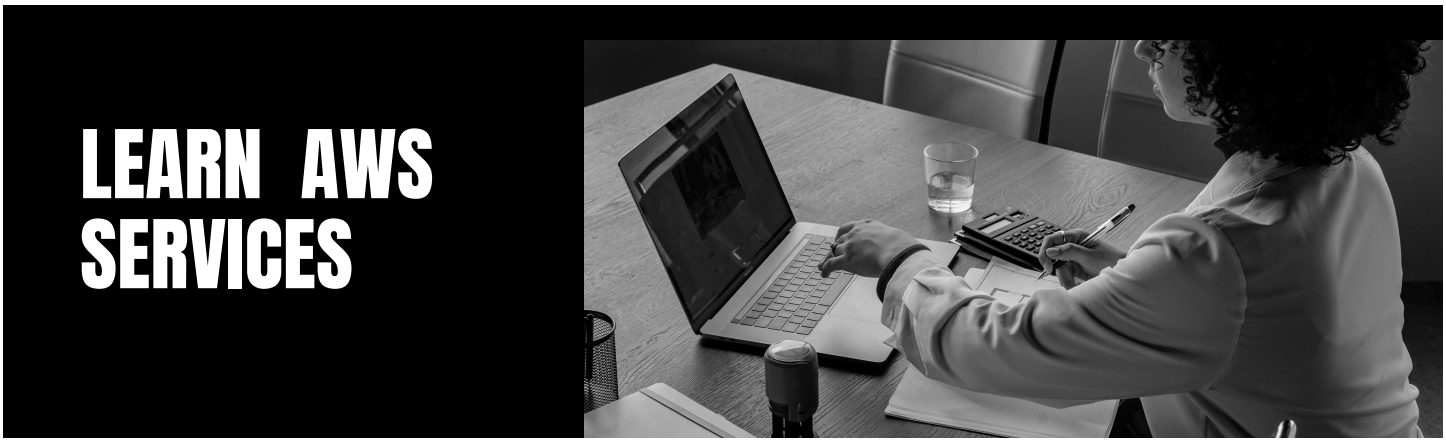
1. **Introduction to LangGraph and AI Agents**
2. **Core Elements of LangGraph - state, nodes, edges**
3. **Building Your First AI Agent**
4. **Introducing Memory in AI Agents - Short-Term Memory, Memory Across Multiple Sessions**
5. **Advanced Routing and Customization of AI Agents- Conditional Routing, Streaming, External API Integrations**
- **Weather API Integration: A Step-by-Step Example**
- **Dynamic API Integration with User Input**
- **Calculator API Integration**
6. **AI Agent Architectures - ReAct**
- **10 Examples of ReAct Agents in LangGraph**
7. **Human-in-the-Loop Agents, Incorporating Human Feedback for Smarter**
- **Implementing Simple Breakpoints, Decision-Making- Breakpoints, Checkpoints, and State Editing**
- **ReAct Agent Example with Financial Stock Purchase Use Case**
- **ReAct Agent with Human Input**
8. **Plan-and-Execute Agents:**
- **IT Troubleshooting and Diagnostics Agent**
- **Practical Example 2. Business Workflow Automation Agent**
- **Practical Example 3: Customer Support Chatbot**
9. **Agentic Retrieval-Augmented Generation (RAG) in LangGraph**
10. **Advanced RAG Architectures (Self-RAG, Corrective RAG and Adaptive RAG)**
11. **Multiagent Architectures**
- **Agent Supervisor**
- **Practical Example 1: A Research Assistant Network**
- **Practical Example 2: Customer Service Automation**
- **Practical Example 3: Stock Analysis**
- **Practical Example 4: Portfolio Management**
12. **Hierarchical Agent Teams**
13. **Specialized Agent Architectures**
- **Event-Driven Agents**
- **Cognitive Architectures**
- **Model-Based Agents**
14. **Testing AI Agents**
15. **Frontend Development for LangGraph-Powered AI Agents**

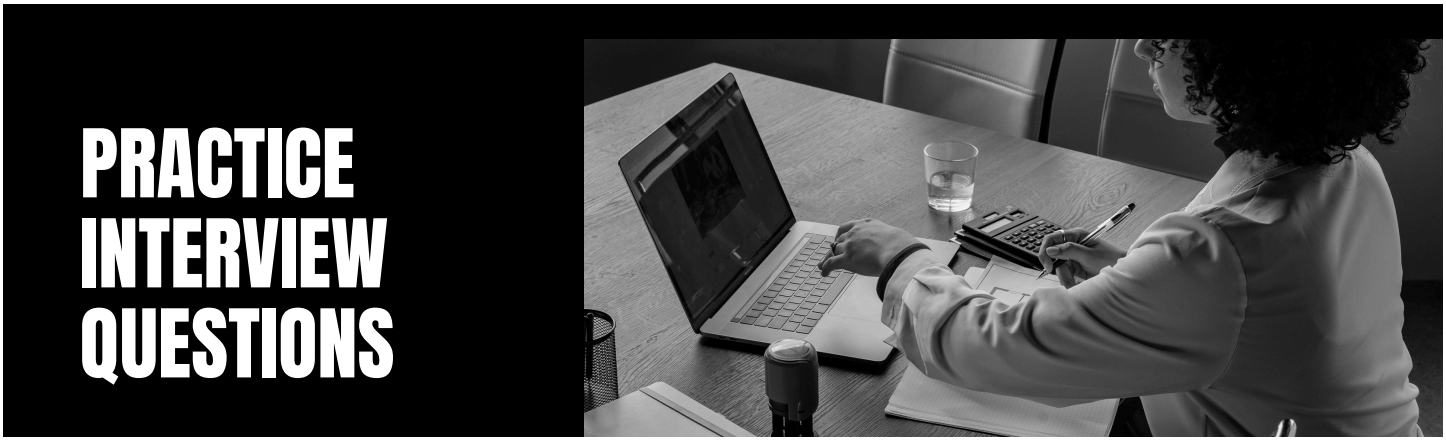
16. **Testing AI Agents with Test-Driven Development (TDD)**
17. **Deploying AI Agents into Production**

9.End to End Projects (Industry Level Projects)

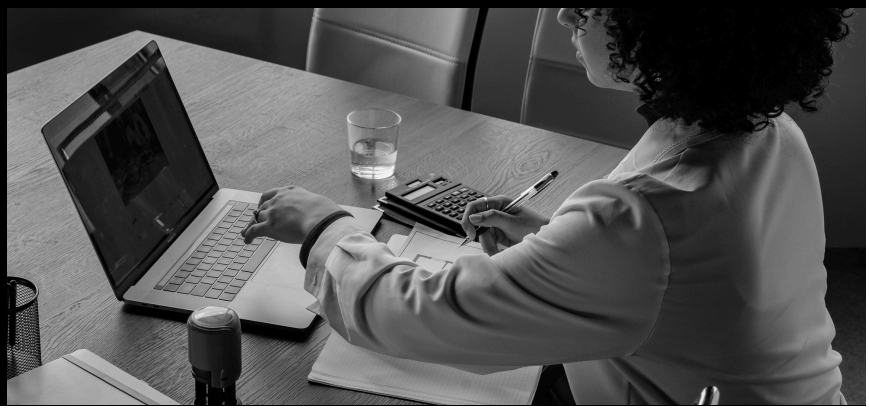
1. **Project#1: RAG with END to END deployment**
2. **Project#2: Fine Tuning with END to END deployment**
3. **Project#3: Agentic AI with RAG with END to END deployment**
4. **Project#4: Multiagent Systems with END to END deployment**



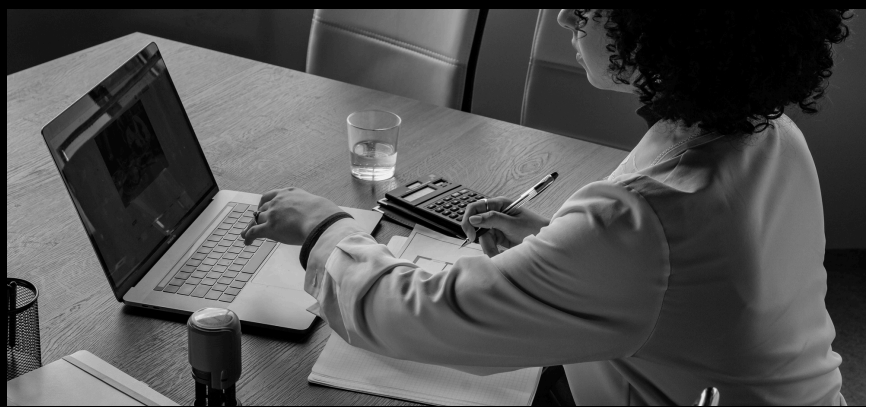




RESUME BUILDING



NAUKRI, LinkedIN, GITHUB PROFILE BUILDING



MOCK INTERVIEWS