KOENIG SOLUTIONS · COURSE OUTLINE

Agentic AI Dev: LangChain, AutoGPT & YOLOv8

Learn to build autonomous AI agents using LangChain, AutoGPT, YOLOv8 and related tools, from planning to deployment.

24 Hours	9	28	4
DURATION	MODULES	TOPICS	HANDS-ON ACTIVITIES

COURSE OVERVIEW

This comprehensive course offers a comprehensive journey into Agentic AI, guiding learners through the foundational concepts, architectural frameworks, and real-world applications of autonomous agents. Participants will explore cutting-edge tools such as Hugging Face Transformers, LangChain, and Llama 2 for language model orchestration; dive into agent planning with AutoGPT, BabyAGI, and reinforcement learning frameworks like StableBaselines3; and develop vision and multi-modal capabilities using YOLOv8, CLIP, and Whisper. The program emphasizes practical implementation through interactive modules on chatbot development, fine-tuning open-source models, and building intuitive UIs with Gradio and Streamlit—culminating in capstone projects that apply agentic intelligence to text-based customer support and multi-modal data entry. Integration with Azure pipelines, experiment tracking with MLflow, and Docker-based deployment ensure that learners build production-ready, scalable agent systems.

WHO THIS COURSE IS FOR

- **AI Developers**
- **Machine Learning Engineers**
- **Chatbot Developers**
- **Computer Vision Engineers**
- **MLOps Engineers**

PREREQUISITES

- Foundational Understanding of AI/ML
- Intermediate level proficiency in Python
- Exposure to tools like Jupyter notebooks, Git would be helpful.
- Understanding of Chatbot Workflows

LEARNING OBJECTIVES

- Introduce participants to core Agentic AI concepts and architectures
- Enable practical skills in working with open-source language models and orchestration frameworks
- Build capabilities to design decision-making agents, vision/multimodal agents, and chatbots
- Equip learners to evaluate, fine-tune, and deploy agentic AI models effectively
- Empower participants to build and present complete agentic solutions via capstone projects

COURSE SYLLABUS

9 Modules, 28 Topics

01

Introduction to Agentic AI

TOPICS

Overview of Agentic AI Concepts · Key Use Cases and Application Areas · Architecture and Component Overview

02

Hands-on

Working with Open-Source Language Models

TOPICS

Hugging Face Transformers (Bloom, Falcon) · LangChain for LLM Orchestration · Open-Assistant & Llama 2 Setup

03

Hands-on

Building Decision-Making Agents

TOPICS

AutoGPT and BabyAGI Fundamentals · Stable-Baselines3 & RLlib · Planning with PDDL Solvers

04

Vision and Multi-Modal Agent Capabilities

TOPICS

YOLOv8 and OpenCV/Mediapipe for Vision Tasks · CLIP for Text-Image Understanding · Whisper for Audio Processing · Vision and Audio demos

05

Interface Development & Integration

TOPICS

Gradio and Streamlit for Agent UI · Dockerizing Agentic AI Applications · Azure Deployment Pipelines · UI & deployment setup

06

Hands-on

Agentic Chatbots

TOPICS

Conversational Workflow with LangChain · Multi-turn Dialogue Design · **Hands-On:** Build a Use-Case Specific Chatbot

07

Hands-on

Model Evaluation & Optimization

TOPICS

Using MLflow for Experiment Tracking · Hyperparameter Tuning & Model Versioning · Integrating Evaluation into Agent Workflow

08

Fine-Tuning Open-Source Models

TOPICS

Hugging Face Trainer, PEFT, and Dataset Prep · Custom Agent Behaviors Through Model Tuning · Model fine-tuning

09

Capstone Projects

TOPICS

Text-Based Autonomous Customer Support Agent · Multi-Modal Data Entry Agent

HANDS-ON ACTIVITIES

Practise What You Learn

#	MODULE	ACTIVITY
02	**Working with Open-Source Language Models**	Model setup & orchestration
03	**Building Decision-Making Agents**	Agent planning & RL tasks
06	**Agentic Chatbots**	Chatbot build
07	**Model Evaluation & Optimization**	Tracking & tuning

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training | Live Online Classes (ILO) | Fly-Me-A-Trainer (FMAT) | Flexi (Self-Paced) | 1-on-1 Training

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