

Agentic AI **Pioneer** Program

Projects



Projects Overview

In the Agentic AI Pioneer Program, participants will engage in real-world, hands-on projects designed to build practical skills and deepen their understanding of AI agents. These projects cover diverse domains such as business research, customer engagement, sales automation, and advanced language models.

Through these exercises, learners will work with leading AI tools like LangChain, ChatGPT, Google Gemini, and GPT-4o to engineer intelligent agents capable of tackling complex tasks such as research analysis, customer support, product recommendations, and multimodal data processing. These projects not only focus on foundational skills but also introduce advanced concepts like multi-user conversational systems and Retrieval-Augmented Generation (RAG) systems.

By completing these projects, learners will gain the ability to design, deploy, and customize AI agents, helping them solve real-world challenges and enhance their AI expertise.

Validate Your Business Plan with Generative AI:

Ideate, Validate, and Create a business plan using prompting techniques in LLMs and RAGs.



Build a Company Researcher Agent:

Learn to create a simple agent that researches a company and creates a short description.



Create a Resume Reviewer Agent:

Build a smart agent that can edit and review your resume content based on the parameters that you have set and produce enhanced quality suggestions to help your resume standout.



Build a Customer query Chatbot:

Build a chatbot to take care of customer queries and provide relevant resolutions based on their problems.



Design a Sales Agent:

Build an advanced agent that consists of information regarding various products of the company, it analyses the customer data to find the suitable product for them and create a pitch for them.



Review Analyst:

Analyzing customer reviews for sentiment, identifying pros and cons, and generating email responses based on the analysis.



Research Paper Analyst:

Analyzing and summarizing research papers based on different personas and constraints to assist in extracting useful insights and generating summaries.



Social Media Marketing Analyst:

Creating marketing advertisements and content for a small enterprise by leveraging social media analytics.



IT Support Analyst:

Processing, translating, and analyzing IT support tickets, and generating appropriate responses for technical issues.



Linking Multiple Chains Sequentially with LCEL:

This mini-project demonstrates how to connect several LLM chains sequentially using LCEL. The output from one chain serves as input for the next in a series, allowing for the combination of intermediate outputs to generate a final result.



Branching and Merging Chains with LCEL:

This project shows how to work with multiple independent LLM chains in parallel, merging their outputs into a consolidated final result using a merge chain at the end.



Routing Chains with LCEL:

This project focuses on creating individual LLM chains that perform distinct tasks like summarizing or sentiment analysis. A router chain classifies user prompts and directs them to the appropriate chain automatically for task-specific results.



Build a multi-user conversational chatbot for product recommendations

Learn how to build a multi-user conversational chatbot, leverage memory to store conversations per user session and work on an interesting use-case of recommending retail products to customers based on their queries.



Prompt Engineering with ChatGPT on Real-World Tasks:

Focuses on practical applications of prompt engineering using ChatGPT for tasks like summarization, entity extraction, sentiment analysis, synthetic data generation and more.



Multimodal Prompt Engineering with Google Gemini:

Involves prompt engineering using Google Gemini on multimodal data like text, images, audio and video.



Multimodal Prompt Engineering with GPT-4o:

Explores the capabilities of GPT-4o with multimodal tasks including handwritten text analysis, analyzing graphs and charts, analyzing images, audio and video.



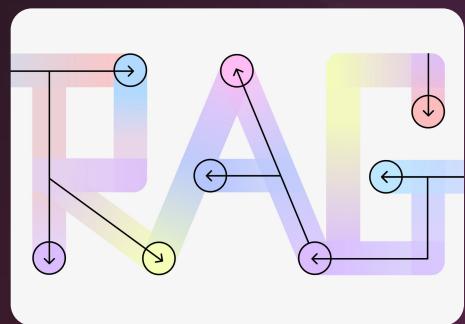
Bonus: Prompt Engineering with Llama 3.1 & GPT-4o mini:

Comparative Analysis of Prompt engineering using Llama 3.1 and GPT-4o on real-world tasks including few shot classification, coding, information extraction, question-answering, summarization and more.



Simple RAG System with Sources:

Building a basic Retrieval-Augmented Generation system that cites sources alongside the generated responses.



Multi-user Conversational RAG System:

Developing a conversational RAG system that can handle multiple users and conversations with memory to provide relevant responses.



Multimodal RAG System:

A project focused on integrating multiple midex data formats (like text, tables and images) into a RAG pipeline to be able to leverage multimodal LLMs to answer questions using multimodal data.



Learn to Build These Powerful Agents and Lead the Era of Autonomous Intelligence!

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