7-Day Challenge: Building LLM Applications

Study Group Lead: Candice You

Information Session: Jan 6. 2025, 12 PM EST

Challenge Start Date: Jan 6. 2025

Challenge End Date: Jan 12. 2025

Duration of Challenge: 7 days

Estimated Learning Time: 1.5-2h per day

Difficulty Level: Beginner

Prerequisites: Python and basic knowledge of writing prompts for LLMs.

Kickoff (Jan 6th): Information Session (online meeting)

Day 1 (Jan 6th): Introduction to Prompt Engineering and LLM Fundamentals (Self-Paced)

Goal: Understand the basics of AI, ChatGPT, and prompt engineering.

Topics:

- Introduction to prompt engineering and LLM applications.
- Using the OpenAI API for tasks like summarization, translation, sentiment classification.
- Best Practices for Writing Prompt Templates.

Assignment:

- Complete the course: [ChatGPT Prompt Engineering for Developers](#).

Day 2 (Jan 7th): Building Systems with the ChatGPT API (Self-Paced)

Goal: Learn how to use the OpenAI API to build functional systems.

Topics:

- Building chains of prompts that leverage prior completions.
- Developing a simple chatbot using OpenAI API.

Assignment:

- Complete the course: [Building Systems with ChatGPT API](#).

Day 3 (Jan 8th): Introduction to LangChain for LLM Applications (Self-Paced)

Goal: Learn the fundamentals of LangChain and how to build LLM-based applications.

Topics:

- Overview of LangChain.
- Introduction to chains, memory and agents.
- Create a question-answering system over your documents using LangChain.

Assignment:

- Complete the course: [LangChain for LLM Application Development](#).

Day 4 (Jan 9th): Retrieval Augmented Generation (RAG) using LangChain (Self-Paced)

Goal: Learn to build a chatbot that responds to queries based on the content of your documents, using LangChain.

Topics:

- Document loading, splitting, and embedding.
- Vector stores for retrieval and Q&A.
- Adding memory for context-aware chatbot.

Assignment:

- Complete the course: [LangChain Chat with Your Data](#).

Day 5 (Jan 10th): Functions, Tools, and Agents with LangChain (Self-Paced)

Goal: Build dynamic agents using tools and functions in LangChain.

Topics:

- Overview of agents and their functionality.
- Using tools like APIs and calculators.
- Building custom agents for multi-step workflows.

Assignment:

- Complete the course: [Functions, Tools, and Agents with LangChain](#).

Day 6 (Jan 11th): Use Case Tutorial and Demonstration (Online Meeting, 2pm EST)

Goal: Based on the concepts in the courses, build RAG and agent following the tutorial.

Topics:

- Develop a chatbot for querying documents.
- Integrate a graph database for data visualization.
- Build a simple LLM agent by integrating tools.

Assignment:

- Join an online tutorial.

Day 7 (Jan 12th): Showcase (Online Meeting, 2pm EST)

Goal: Showcase and demonstrate projects from participants.

Assignment:

- Join an online meeting to share your projects or learn from other participants!

Optional: meet up at a coworking space in Manhattan, NY to work on our projects together.