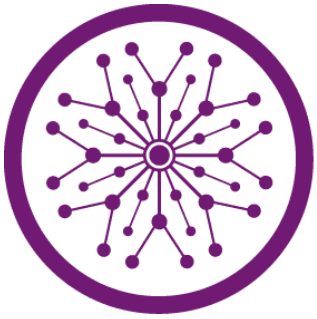

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Lab Task: 11

Task 11

1. LangChain

LangChain is a tool that helps developers build applications using Large Language Models (LLMs) more effectively. It allows for the integration of LLMs with external data sources, APIs, and other tools, making it easier to create complex AI applications.

2. Retrieval-Augmented Generation (RAG)

RAG is a technique that enhances the responses of LLMs by retrieving relevant information from external sources before generating an answer. This approach ensures that the AI's output is more accurate and up-to-date, especially when dealing with information not present in the model's training data.

3. Large Language Models (LLMs)

LLMs are advanced AI models trained on vast amounts of text data to understand and generate human-like language. They are capable of performing various tasks such as translation, summarization, and question-answering.

4. FAISS (Facebook AI Similarity Search)

FAISS is an open-source library developed by Facebook AI that enables efficient similarity search and clustering of dense vectors. It's particularly useful for searching through large datasets to find similar items quickly.

5. Vector

In the context of AI and machine learning, a vector is a numerical representation of data, such as words or images. These vectors capture the semantic meaning of the data, allowing machines to process and analyze it effectively.

6. Vector Database (VectorDB)

A **Vector Database** is a specialized database designed to store and manage vector embeddings. It facilitates efficient similarity searches, enabling AI applications to retrieve data points that are contextually similar based on their vector representations.

7. Generative AI

Generative AI refers to AI models that can create new content, such as text, images, or music, by learning patterns from existing data. These models are capable of producing original content that resembles the data they were trained on.

8. Generative Adversarial Networks (GANs)

GANs are a type of machine learning model that can generate new, realistic data, such as images or text. They consist of two parts:

- **Generator**: Creates fake data resembling real data.
- **Discriminator**: Evaluates data and determines whether it's real or generated.