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**1. LangChain**

* **What it is:** A Python framework.
* **Purpose:** Helps connect **LLMs** (like GPT) with external tools, databases, and documents.
* **Think of it like:** A bridge between your AI model and real-world data (documents, websites, tools).
* **Use case:** Used to build **chatbots**, **search tools**, or **Q&A systems** based on your own data.

**2. RAG (Retrieval-Augmented Generation)**

* **What it is:** A method or approach.
* **Purpose:** Combines **retrieving documents** and then using an LLM to generate answers.
* **Think of it like:** Searching for useful info first, then using AI to answer based on it.
* **Use case:** Useful for answering questions from large documents or websites.

**3. LLMs (Large Language Models)**

* **What it is:** Powerful AI models trained on huge amounts of text.
* **Purpose:** Can understand and generate human-like text.
* **Examples:** GPT-4, Claude, LLaMA.
* **Use case:** Chatbots, writing tools, translators, etc.

**4. FAISS (Facebook AI Similarity Search)**

* **What it is:** A library created by Facebook.
* **Purpose:** Helps search through **vectors** quickly to find similar ones.
* **Think of it like:** A super-fast "search engine" for vector data.
* **Use case:** Used in **RAG** to find relevant text chunks for questions.

**5. Vector**

* **What it is:** A list of numbers (mathematical object).
* **Purpose:** Represents meaning of words or sentences in a way that machines can understand.
* **Example:** The sentence "I love cats" is converted into a vector like [0.56, -0.32, ...]
* **Use case:** Used for similarity search, clustering, and machine learning.

**6. VectorDB (Vector Database)**

* **What it is:** A special database to store and search vectors.
* **Purpose:** Stores sentence/word embeddings and allows fast search.
* **Examples:** FAISS, Pinecone, Weaviate, Chroma.
* **Use case:** Needed when working with LLMs + RAG for Q&A on your data.

**7. Generative AI**

* **What it is:** A type of AI that can **generate content** like text, images, music.
* **Examples:** ChatGPT (text), DALL·E (images), etc.
* **Use case:** Writing, image creation, coding, design, etc.

**8. GANs (Generative Adversarial Networks)**

* **What it is:** A **type of Generative AI**.
* **How it works:** Uses two neural networks — one generates images, the other checks them.
* **Purpose:** Creates very realistic images, videos, etc.
* **Use case:** Deepfakes, art generation, photo editing.