Comparison of Key AI and NLP Concepts

# LangChain

A framework for building applications powered by large language models (LLMs). Used to connect LLMs with external data sources (APIs, documents) and manage memory, chains, and agents. Example: Building a chatbot that uses real-time data or private documents.

# RAG (Retrieval-Augmented Generation)

A technique that combines document retrieval with language generation. It allows LLMs to generate answers using external knowledge without retraining. Example: Upload documents and get answers based on the most relevant ones.

# LLMs (Large Language Models)

AI models trained on vast text data to understand and generate human-like language. Used for tasks like answering questions, summarizing, coding, translating. Examples: GPT-4, BERT, LLaMA.

# FAISS (Facebook AI Similarity Search)

A library for efficient similarity search and clustering of dense vectors. Enables fast vector comparison and retrieval in large datasets.

# Vector

A numerical representation of data like words, sentences, or images. Used in AI to compare and process content mathematically. Example: The phrase 'mental health' is converted into a high-dimensional vector.

# VectorDB (Vector Database)

A database optimized for storing and querying vector data. Used for similarity searches on embeddings (vector representations). Examples: Pinecone, Weaviate, Chroma, Milvus.

# Generative AI

AI that creates new content such as text, images, and music. Includes models like ChatGPT, Midjourney, DALL·E. Used for creative content generation.

# GANs (Generative Adversarial Networks)

A type of generative AI involving two networks: a generator and a discriminator. They work against each other to create realistic data like images or audio. Examples: Deepfakes, AI-generated art.