

LangChain Models



LangChain provides seamless integration with a variety of LLMs—from OpenAI to Cohere, Hugging Face, and beyond. It supports both chat-based and text completion models, allowing developers to plug in their preferred LLMs easily.

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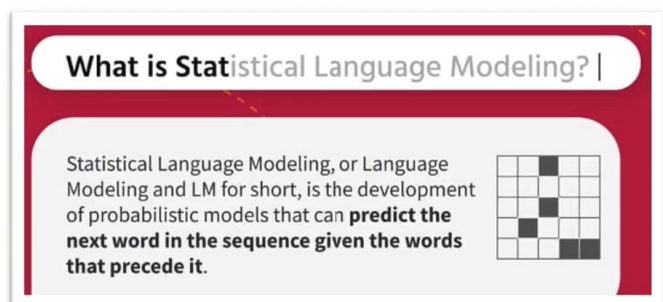
What are Language Models?

Definition:

Language models (LMs) are AI systems trained to understand and generate human-like text. They predict the next word based on previous context.

Applications:


- ☐ Text generation
- ☐ Chatbots
- ☐ Code generation
- ☐ Text summarization
- ☐ Question answering



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Types of Language Models


LLMs vs Chat Models:

Type		Description	Example
LLM		General-purpose model for many NLP tasks	GPT-4, LLaMA, PaLM
Chat Model		Specifically fine-tuned for conversations	ChatGPT, Claude, Gemini Chat

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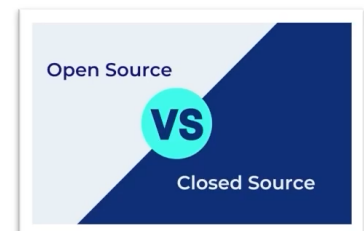
Closed-Source vs Open-Source Models

Closed Source:

- ☐ Developed & hosted by companies.
- ☐ Require API key. 
- ☐ Examples: OpenAI (GPT-4), Anthropic (Claude), Google (Gemini).

Open Source:

- ☐ Community-developed and self-hostable.
- ☐ HuggingFace Hub provides 1000s of models.
- ☐ Examples: LLaMA 2, Falcon, Mistral, OpenChat, Mixtral.



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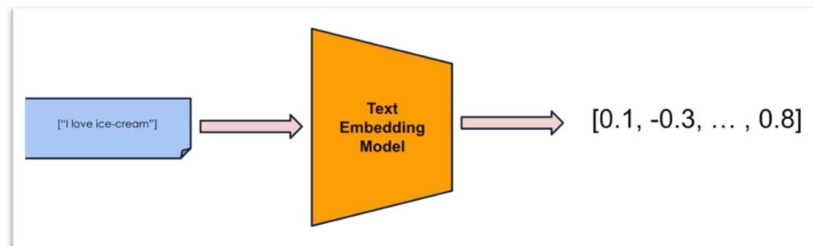
What are Embedding Models?

Definition:

Embedding models convert text into high-dimensional vectors to capture semantic meaning.

Use Cases:

- ☐ Similarity search
- ☐ Clustering
- ☐ RAG (Retrieval-Augmented Generation)



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Closed vs Open Embedding Models

Model Type	Provider	Example Model	Hosted or Local
Closed	OpenAI	text-embedding-3-small	Hosted API
Closed	Google, Anthropic	Gemini Embed (Beta)	Hosted API
Open Source	HuggingFace	sentence-transformers/all-MiniLM-L6-v2	Local or cloud

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