**What is an LLM?**

A **Large Language Model (LLM)** is a type of artificial intelligence designed to understand and generate human-like text. ChatGPT, for example, is an LLM.

Think of it as a super-advanced **autocompletion engine**: it predicts what word (or piece of a word) should come next, based on everything it has read before.

**How it learns**

1. **Training on text**:  
   The model is fed a huge amount of text (books, articles, websites). It doesn’t “memorize” everything, but it learns patterns — like grammar, facts, styles of writing.
2. **Finding patterns**:  
   The model looks at billions of examples of how words appear together and learns probabilities:
   * If I say *“peanut butter and …”* → the model knows *“jelly”* is a likely continuation.
3. **Neural networks**:  
   LLMs use a type of AI called a **neural network**, inspired (loosely) by how the brain works. The most common kind for language is called a **transformer** (that’s what the “T” in GPT stands for).
   * Transformers are really good at noticing relationships between words, even far apart in a sentence.

**How it answers your questions**

When you ask a question:

* The model breaks your text into tokens (chunks of words).
* It looks at all the tokens and uses what it learned during training to predict the most likely next token.
* It does this over and over, building a full answer.

It doesn’t *think* or *understand* in the human sense — it’s predicting text based on patterns. But because it was trained on so much data, the predictions often feel intelligent.

**Strengths and limits**

✅ **Strengths**:

* Can generate human-like answers.
* Useful for writing, coding, summarizing, answering questions.

⚠️ **Limits**:

* Doesn’t have real understanding or emotions.
* Can make mistakes or “hallucinate” facts.
* Doesn’t know things outside its training unless connected to tools (like browsing).

👉 Imagine it like this: an LLM is a **very advanced parrot with a huge library**. It doesn’t truly *know* things, but it’s excellent at repeating patterns in ways that seem meaningful.