

## ONE PAGE, THE WHOLE COURSE

# How an LLM Actually Works

 THE CORE LOOP

You type

→ tokens

→ predict next token

→ append

↺ repeat

→ reply

It learned **patterns** from training (not facts), sees a **context window** (its short-term memory), and **samples** its answers — which is why it varies, and why it can **hallucinate**.

 ONE LINE TO REMEMBER FROM EVERY SECTION

|    |                                         |                                                             |
|----|-----------------------------------------|-------------------------------------------------------------|
| 01 | What Is an LLM, Really?                 | It predicts text. It doesn't think like you.                |
| 02 | The One Big Idea: Predict the Next Word | A next-word predictor, not a fact database.                 |
| 03 | Tokens: How AI Reads                    | The model thinks in tokens, not letters.                    |
| 04 | How It Learned: Training                | It learned patterns, not a library of facts.                |
| 05 | The Context Window                      | The context window is all it knows right now.               |
| 06 | Temperature: Why Answers Vary           | It samples — it doesn't look up.                            |
| 07 | Why It Hallucinates                     | Trust, but verify. Always.                                  |
| 08 | From Raw Model to Assistant             | The assistant is a raw model that went to finishing school. |
| 09 | Talking to It: Prompting                | A better prompt beats a bigger model.                       |
| 10 | What LLMs Can't Do                      | Know its blind spots, and it gets far more useful.          |
| 11 | Using LLMs Well in Real Life            | You + an LLM beats either one alone.                        |
| 12 | Beyond Text: Multimodal AI              | Same engine — now with eyes and ears.                       |
| 13 | Choosing Your AI                        | Match the model to the task.                                |
| 14 | Using AI Responsibly                    | Powerful tool, informed user.                               |

 THE DURABLE TAKEAWAY

**It predicts language brilliantly. The judgement is still yours.**