

Why does AI calmly make up facts? — Hallucination

Five-Minute AI Lessons · Sep 12, 2026

Saying it confidently doesn't make it true

In a nutshell

- 1 AI isn't looking up facts — it just picks **the most likely next words**, so it can produce wrong sentences with total confidence.
- 2 This is called **hallucination** — it's not an intent to lie, but a limit of a design that builds answers that sound likely.
- 3 It's especially likely to be wrong about facts that are missing or rare in its training data, recent news, or exact numbers and dates — **always check somewhere else.**

No right answer? The odds still pick one

Question:
“Which paper backs up
this claim?”



AI: mixes believable names
and titles by probability



**Result: a paper and author
that don't exist**

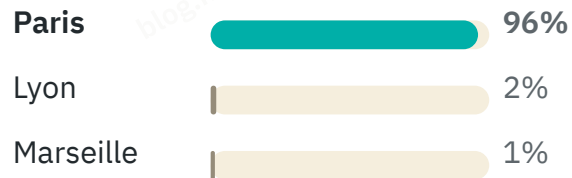
When you check: neither that author nor that paper actually existed.

Key idea: always double-check important facts with another source.

How the odds spread, question by question

96%

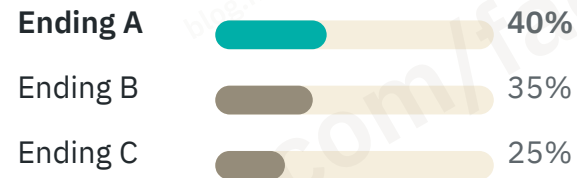
Easy · “Capital of France?”



Shows up a lot in training data → the odds pile up on one side

40%

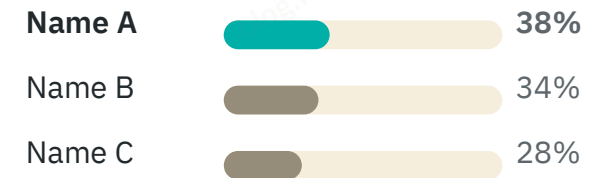
Vague · “The hidden ending?”



No clear answer → the odds spread out evenly

38%

No answer · “Who wrote it?”



Even with no answer at all, probability picks something anyway

Even when the odds are even, AI picks one and says it 'confidently'.

※ The numbers are examples to help you understand.

Just three questions

Q1

What's the root cause of hallucination?

- ① The AI means to lie
- ② AI is built to pick likely-sounding words
- ③ Server errors
- ④ The user asked the question wrong

Q2

(True / False) Hallucination happens more often when you ask about things that are missing or rare in the training data.

Q3

(True / False) If AI answers in a confident tone, what it says is always true.

Know the why, too

Q1

②

AI is built to pick the most likely next words, not to look up facts — so even with no right answer, it produces something believable.

Q2

T

The rarer the fact, the blurrier the probabilities get — and it fills the gap with believable-sounding words.

Q3

F

A confident tone and whether something is true are two different things. Always check important info separately.

**Saying it confidently
doesn't make it true.**



Tomorrow: 'memory limits' — why does AI forget what you just said?