

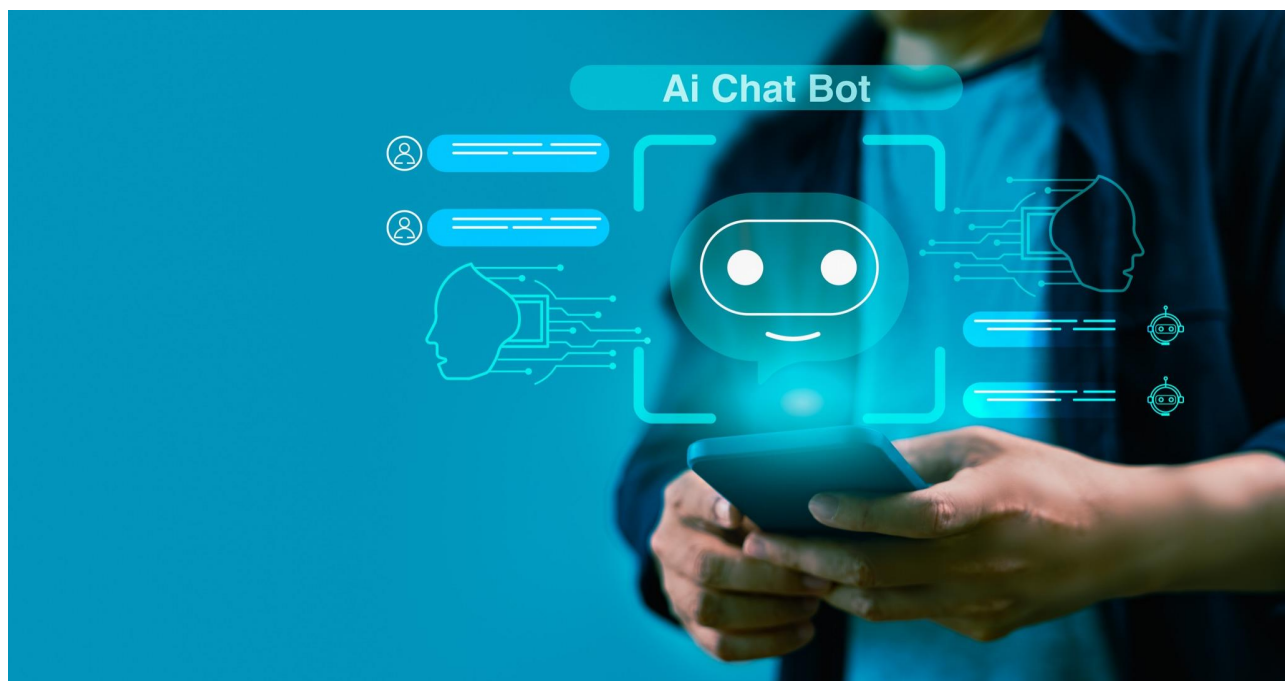


## Relationship Between Prompts and Responses

In the previous resources, you've learned prompts and language models, but do you wonder why a language model responds to a certain prompt? Is there magic formula behind it? Let's find out!

The relationship between a prompt and a response can seem mystifying at first, like trying to decipher a secret code. But as you spend more time working with prompts, you'll find that they're more like guiding stars, illuminating the path for the language model to follow. This resource will explore the intricate dance between prompts and responses and help you understand how to lead the dance.

### The Dynamic Duo: Prompts and Responses



Think of a prompt as an invitation to a conversation. It sets the tone, topic, and direction. The language model's response is acceptance of that invitation and contribution to the conversation. If you prompt a language model with "Describe a beautiful sunset," the model's response would be to generate descriptions of a sunset.

But the dynamic between prompts and responses goes **much** deeper than just "ask and answer." **The same prompt can result in vastly different responses based on subtle differences in wording, context, or the amount of information provided.**

Try the following prompts on Chat-GPT::

1. "Translate the following English sentence to French: 'I love dogs.'"
2. "Translate the following sentence to French: 'I love dogs.'"
3. "Translate 'I love dogs' to French."

Did you notice how the model responded differently when the context of the language (English) was removed in the second prompt? What about when the formal structure was reduced in the third prompt?

## Decoding the Relationship

The prompts you used in the previous exercise had the same intention, but their structure and specificity influenced the language model's responses. The language model does its best to interpret and follow the instructions in a prompt, but it's a bit like reading your mind based on what you've written down. The more specific and clear you are, the closer the response will be to what you intended.

Yet, no matter how clear you think your prompt is, sometimes the response might surprise you. **That's because a language model's responses are probabilistic, meaning the model generates what it "thinks" is the most likely continuation based on what it has learned from its training data.** That's why two prompts that seem identical to you might yield different responses.

Imagine you're asking the AI to write a poem about spring.

The prompt "Write a poem about spring" may elicit a general ode to spring. Try it on Chat-GPT!

But if you specify a poetic form—say, a haiku—the AI adapts to this new information: "Write a haiku about spring." The form and nature of the response change dramatically based on the prompt's detail level. Modify the prompt and see for yourself!

Similarly, adding emotional context to the prompt like "Write a sad haiku about spring" guides the AI even further, affecting the tone of the response.

These examples show that the AI doesn't just react to the prompts—it interacts with them, demonstrating a dynamic relationship. Your prompts instruct and guide the AI,

using its learned patterns to generate creative and contextually appropriate responses.

In the AI world, prompts and responses share a dynamic, two-way relationship. **Think of it like a dance: you, the human, lead by providing a prompt, and the AI, or the language model, follows by generating a response.** The nature of the prompt heavily influences the steps that the AI will take.

## Extracting Information: How Prompts Guide Language Models

When given a prompt, language models like GPT-3 and GPT-4 extract key pieces of information, such as the task (e.g., write a haiku), the subject (spring), and the tone or emotion (sadness). Based on this information, the model then generates a response that aligns with the parameters set by the prompt.

Let's look at a concrete example. If you prompt the language model with, "What's the weather like in Paris today?," the model identifies the task (provide weather information), the subject (Paris), and the time reference (today). But remember, GPT-3 and GPT-4 do not have access to real-time data or the ability to browse the internet. So while they understand what you're asking, they can't provide the current weather update. Instead, they might generate a generic response based on patterns they've learned from their training data, such as "I'm sorry, as an AI, I don't have real-time capabilities."

As we can see, understanding the role of prompts in extracting information and guiding the response is key to effectively using large language models. The more specific and directive the prompt, the more accurately the model can respond.

Try prompting Chat-GPT with the sentence "Tell me a joke" multiple times. Do you get the same response each time? Why do you think that is?

## Guiding the Dance

Remember, when working with a language model, you're not just asking it to do something; you're guiding it. The model doesn't know you or your specific expectations, so it uses your prompt as its compass. As you craft your prompts, consider how each word, each piece of information, and each instruction might guide the model's response.

We hope you're starting to see the power of a well-crafted prompt and how it can steer the output of your language model. In the next resource, you'll dig even deeper into the art of crafting effective prompts. Stay curious and keep experimenting!

Try prompting Chat-GPT with the following and analyze the responses:

1. Creative Writing Prompts:
  - a. Write a short story about a character who discovers a hidden superpower.
  - b. Describe a peaceful and idyllic setting by using vivid sensory details.
  - c. Imagine you wake up one day and find yourself in a completely different time period. Write about your experience.
2. Translating Prompts:
  - a. Translate the following English sentence into Spanish: "The sun is shining brightly in the clear blue sky."
  - b. Provide a French translation for the phrase: "Hello, how are you?"
3. Summarizing Prompts:
  - a. Summarize a news article about climate change in three sentences.
  - b. Write a concise summary of a movie plot in no more than 50 words.