

Introduction to prompt engineering

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GPT-3, GPT-3.5, and GPT-4 models from OpenAI are prompt-based. With prompt-based models, the user interacts with the model by entering a text prompt, to which the model responds with a text completion. This completion is the model's continuation of the input text.

While these models are extremely powerful, their behavior is also very sensitive to the prompt. This makes prompt construction an important skill to develop.

Prompt construction can be difficult. In practice, the prompt acts to configure the model weights to complete the desired task, but it's more of an art than a science, often requiring experience and intuition to craft a successful prompt. The goal of this article is to help get you started with this learning process. It attempts to capture general concepts and patterns that apply to all GPT models. However it's important to understand that each model behaves differently, so the learnings may not apply equally to all models.

Basics

This section covers the basic concepts and elements of GPT prompts.

Text prompts are how users interact with GPT models. As with all generative language models, GPT models attempt to produce the next series of words that are most likely to follow from the previous text. It's as if we're saying *What is the first thing that comes to your mind when I say <prompt>?*". The examples below demonstrate this behavior. Given the first words of famous content, the model is able to accurately continue the text.

 Expand table

Prompt	Completion
Four score and seven years ago our	fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal. [...]
"Call me Ishmael."	"Some years ago—never mind how long precisely—having little o no money in my purse, and nothing particular to interest me on shore, I thought I would sail about a little and see the watery part of the world." [...]

As you develop more complex prompts, it's helpful to keep this fundamental behavior in mind. Regardless of the prompt that is provided, the model is simply responding with what it determines is most likely (given its training data and training

targets). If you ask a question in your prompt, the model isn't following a separate "Q&A" code path, but rather it appears to answer the question because an answer is the most likely sort of response for the given question as input.


Prompt components

When using the Completion API while there's no differentiation between different parts of the prompt, it can still be useful for learning and discussion to identify underlying prompt components. With the [Chat Completion API](#) there are distinct sections of the prompt that are sent to the API in the form of an array of dictionaries with associated roles: system, user, and assistant. This guidance focuses more generally on how to think about prompt construction rather than providing prescriptive guidance that is specific to one API over another.

It's also important to understand that while there could be other valid ways to dissect prompts, the goal of this breakdown is to provide a relatively simple way to think about prompt construction. With the Completion API, all the components are optional, but at least one must be present and most prompts include more than one component. There can be some grey area between components as well. The order presented below roughly corresponds to how commonly each component is used, from most to least.

Instructions

Instructions are likely the most commonly used prompt component. Instructions are simply that: instructions to the model on what to do. While simple in concept, they can be complex in practice. The following table illustrates this by showing both simple and more complex instructions, in two different forms.

 Expand table

Instruction Type	Prompt	Completion
Simple instructions	Write an introduction for a weekly newsletter.	Welcome to our weekly newsletter. This week we have a special focus on productivity. We'll be sharing tips and tricks on how to be productive in all areas of your life. We hope you enjoy and please share with your friends!
Complex instructions	Write an introduction for a weekly newsletter to my company named Contoso. It should mention the great all hands meeting we had last week and thank the team for all their hard work over the tough past few months.	Welcome to Contoso's weekly newsletter! We had a great all hands meeting last week and I want to thank the team for all their hard work over the tough past few months. We're looking forward to a bright future and I'm confident that with our team's dedication and commitment, we will achieve great things. Thank you for being a part of our team and I look forward to working with you all in the coming weeks and months. Sincerely, [Your name].
Complex Instructions	Write an introduction for a weekly newsletter, including the following: <ul style="list-style-type: none">- My company is named contoso- An exuberant greeting- Thanking the team for their hard work over a couple tough months- Positive outlook for the coming quarter- Signed by the SLT	Hello Contoso team! I wanted to take a moment to thank you for all your hard work over the past few months. It's been a tough couple of months, but you've all pulled together and done an amazing job. I'm really proud of you all. Looking ahead to the next quarter, I'm feeling really positive. I think we're going to achieve some great things. Thanks again, The Senior Leadership Team.