Prompt Engineering for LLM

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Agenda

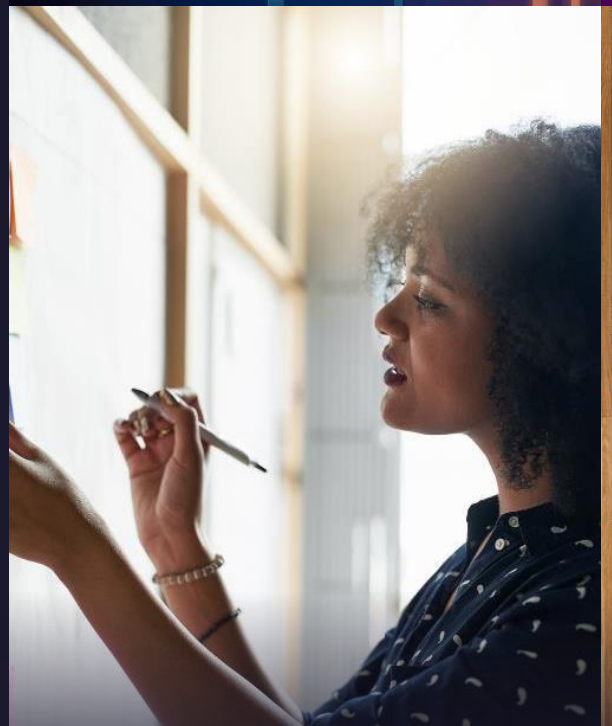
- Definition
- Types of prompts
- Best practices for designing prompts
- Fine-tuning prompts
- Demo

Definition

- Prompt engineering refers to the process of designing and constructing effective prompts for use in natural language processing (NLP) and large languages models (LLM) like ChatGPT. A prompt is a piece of text or code that provides context and guidance to an AI model on how to generate a response or output based on a given input or task.

- In prompt engineering, the goal is to design prompts that can help the model produce high-quality, relevant, and accurate responses. This involves selecting the right type of prompt, structuring it in a way that is easy for the model to understand, and fine-tuning it through trial and error.

- Effective prompt engineering is important for a wide range of NLP applications, such as text generation, question-answering systems, chatbots, and language translation. It can improve the accuracy and efficiency of these systems, making them more useful and effective for a variety of tasks.



Types of prompts

INFORMATION-SEEKING PROMPTS

- These prompts are specifically designed to gather information. The prompts mostly answer the question What and How. Examples of such prompts: "What are the most popular tourist attractions in Japan?", "How do I prepare for Sushi rice?"

INSTRUCTION-BASED PROMPTS

- These are used to give instructions to the model to perform a specific task. A good example of such prompts is the use of Siri, Alexa, or Google Assistant. For example, an instruction prompt might be "Call Dad", or "Play my favorite songs."

CONTEXT-PROVIDING PROMPTS

- These prompts provide information to the AI to help it better understand what the user needs as a response. For example, if you're planning a trip to Europe and need some ideas of places to go and activities, you can structure your prompt like so: "I am planning a trip to Paris, what should I do in a 3 days trip?"

Types of prompts Cont.

COMPARATIVE PROMPTS

- These are used to compare or evaluate different options given to the model to help the user make an appropriate decision. For example: "What are the strengths and weaknesses of ChatGPT compared to Google Bard?"

OPINION-SEEKING PROMPTS

- These are designed to get the AI's opinion on a given topic. For example: "What should I do if I win a lottery?"

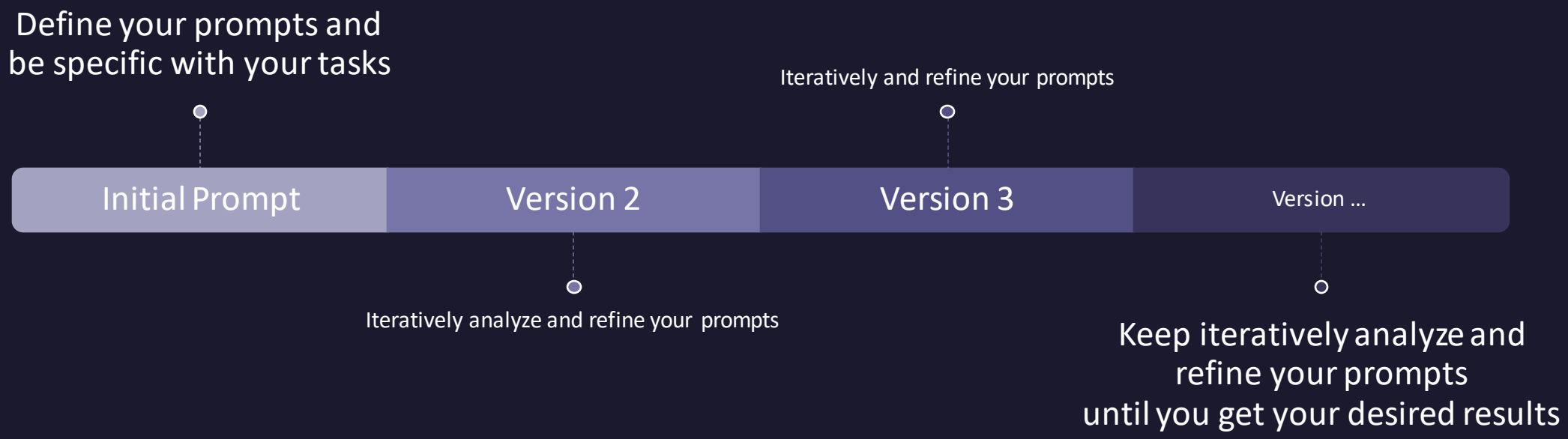
ROLE-BASED PROMPTS

- These prompts provide responses by framing the user's request within a specific role. It's the most commonly used category of prompts. By giving the AI a role, it gives responses based on the role given. For example: As a programmer, your role is to write a marketing website for Interstate Batteries. This website includes the capability of searching products information and purchasing products online.

Best Practices

1. Write clear and specific instructions
    1. Use delimiters to clearly indicate distinct parts of the input. Delimiters can be anything like: ```, """, < >, <tag> </tag>
    2. Ask for a structured output such as JSON, HTML
    3. Ask the model to check whether conditions are satisfied
    4. "Few-shot" prompting
2. Give the model time to “think”
    1. Specify the steps required to complete a task and ask for output in a specified format
    2. Instruct the model to work out its own solution before rushing to a conclusion

Fine-tuning Prompts



Demo

Thank You

- How to Communicate with ChatGPT – A Guide to Prompt Engineering
- ChatGPT Prompt Engineering for Developers
- Introduction to prompt engineering by Azure OpenAI Service