Prompt Engineering Complete Guide

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Introduction

Prompt Engineering ek esi technique hy jisme hm AI models ko sahi aur effective instructions dete hain ta'ake wo desired aur accurate output generate karein. Ye process AI k behavior aur response ko control karne mein madad karta hai. Is guide mein fundamental aur advanced prompting techniques ko detail mein explain kiya gya hai, ta'ake AI ke saath interaction zyada productive aur meaningful ho.

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1. Fundamental Prompting Techniques

1.1 Clarity aur Specificity

Prompt likhte waqt clarity aur specificity sabse important hoti hai. Agar prompt vague hoga to AI confuse ho sakta hy aur irrelevant jawab de sakta hy.
Tips:

- Har prompt mein clear objective likho.
- Ambiguous words avoid karo.
- Ek hi prompt mein ek hi task do.

Example:

- Weak Prompt: "Write about animals."
- Strong Prompt: "Write a short paragraph about the habitat, diet, and behavior of African elephants."

1.2 Context Dena

AI ko context dena uske jawab ki quality improve karta hy. Jab AI ko background information milti hai, to woh zyada relevant aur accurate response deta hy.
Tips:

- Prompt mein background ya scenario mention karo.
- Agar AI ko kisi specific role mein kaam karwana hai to woh bhi likho.

Example:
"Act as a travel guide and describe the best tourist attractions in Paris for a family vacation."

1.3 Role Prompting

Role prompting ka matlab hai AI ko ek specific role assign karna, jisse uska tone, style, aur approach change hota hy.

Tips:

- Role clearly define karo (teacher, doctor, marketer, etc.).
- Role ke hisaab se tone aur vocabulary adjust hoti hy.

Example:
"Act as a professional chef and explain how to make Italian pasta step by step."

1.4 Step-by-Step Reasoning

AI ko reasoning steps follow karne ko kehne se logical aur structured jawab milta hai. Ye technique complex problems solve karne mein useful hoti hy.

Tips:

- Prompt mein likho "Think step by step" ya "Explain your reasoning."
- Har step clearly explain karne ko bolo.

Example:
"Explain step by step how to solve a quadratic equation using the quadratic formula."

1.5 Output Formatting

Prompt mein output ka format specify karne se result organized aur readable hota hai.

Tips:

- Format mention karo (list, table, paragraph, bullet points).
- Agar headings chahiyein to unka structure likho.

Example:
"List the top 5 benefits of regular exercise in bullet points."

1.6 Instruction-Based Prompting

AI ko clear aur structured instructions dene se woh human-like aur accurate responses deta hai.
Tips:

- Har instruction ek line mein likho.
- Complex tasks ko chhote steps mein tod do.

Example:
"Write a professional email to a client apologizing for a delay in delivery. Include greeting, reason for delay, apology, and closing note."

1.7 Example-Based Prompting (Few-Shot Prompting)

AI ko kuch examples dene se woh pattern samajhta hai aur similar output generate karta hai.
Tips:

- 2-3 examples sufficient hote hain.
- Examples clear aur consistent hone chahiyein.

Example:
"Translate the following sentences from English to Urdu:

1. Hello → Salam
2. How are you? → Kya haal hai?
   Now translate: Good morning."

1.8 Zero-Shot Prompting

Jab AI ko bina kisi example ke task diya jata hai, use zero-shot prompting kehte hain. Ye AI ke general knowledge aur reasoning pe depend karta hai.
Example:
"Summarize this paragraph in one sentence."

1.9 Chain of Thought Prompting

Chain of Thought (CoT) prompting AI ko apni reasoning explain karne ke liye encourage karta hai. Ye technique logical aur analytical tasks ke liye best hai.
Example:
"Think step by step before giving the final answer."

1.10 Self-Consistency Prompting

Is technique mein AI se multiple answers generate karwa kar best choose kiya jata hai. Ye accuracy aur reliability improve karta hai.

Example:

"Generate three possible solutions and pick the most logical one."

1.11 ReAct Prompting (Reason + Act)

ReAct prompting mein AI reasoning aur action dono perform karta hai. Pehle woh sochta hai (reasoning), phir action leta hai (response).

Example:

"Think about the problem logically, then take the best possible action to solve it."

1.12 Reflection Prompting

Reflection prompting AI ko apne jawab par dobara sochne aur improve karne ke liye kehna hota hai.

Example:

"Review your previous answer and suggest improvements."

1.13 Multimodal Prompting

Multimodal prompting mein text ke saath images, audio, ya video inputs bhi diye ja sakte hain. Ye AI ko richer context deta hai.

Example:

"Look at this image and describe what is happening in it."

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2. Prompt Optimization Techniques

2.1 Iterative Refinement

Prompt ko test karke aur modify karke best version banana iterative refinement kehlata hai.

Steps:

1. Ek initial prompt likho.
2. Output analyze karo.
3. Prompt ko improve karo.
4. Repeat until desired result mil jaye.

2.2 Prompt Chaining

Prompt chaining mein ek prompt ka output next prompt ke input ke tor par use hota hai. Ye complex workflows ke liye helpful hai.
Example:

1. Prompt 1: "Summarize this article."
2. Prompt 2: "Based on the summary, write a tweet."

2.3 Parameter Tuning

Temperature, max tokens, aur top-p jaise parameters adjust karke AI ke behavior ko control kiya ja sakta hai.
Example:

- Low temperature = precise aur focused answers.
- High temperature = creative aur diverse answers.

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3. Common Mistakes in Prompting

- Prompt vague ya incomplete likhna.
- Multiple unrelated tasks ek hi prompt mein dena.
- Output format specify na karna.
- Context ya examples na dena.
- Overly long aur confusing instructions likhna.

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4. Best Practices for Effective Prompting

- Har prompt ka clear goal define karo.
- Simple aur direct language use karo.
- Role aur context specify karo.
- Output format mention karo.
- Test aur refine karte raho.

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5. Conclusion

Prompt engineering ek evolving skill hai jo AI ke performance ko dramatically improve karti hai. Jab prompts clear, structured, aur context-rich hote hain, to AI ke responses accurate aur useful milte hain. Regular practice aur experimentation se prompt engineering mein mastery hasil ki ja sakti hai.

Source: Panaversity Learn Low-Code Agentic AI — Prompt Engineering Module
Website: github.com/panaversity/learn-low-code-agentic-ai

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Best of luck 🤞

(Don't rely solely on this, study the repository)