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AWS Project Documentation

Prompt Engineering For ChatGPT

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PROMPT ENGINEERING :

Prompt Engineering is the practice of designing and refining prompts to effectively communicate with AI models and get the best responses. It involves crafting clear, precise, and structured inputs to guide AI output in a desired direction.

Key Principles of Prompt Engineering

1. **Clarity & Precision** – Clearly specify what you need to avoid vague or irrelevant responses.
2. **Context & Constraints** – Provide background information and set constraints (e.g., word limit, format).
3. **Examples & Formatting** – Use examples or templates for structured responses.
4. **Iterative Refinement** – Modify and improve prompts based on responses.

Types of Prompts

- **Direct Prompt** – "Summarize the AWS S3 storage service in 50 words."
- **Instruction-based Prompt** – "Write a step-by-step guide for deploying a React app on AWS."
- **Role-based Prompt** – "You are a cybersecurity expert. Explain encryption in simple terms."
- **Comparison Prompt** – "Compare AWS Lambda and EC2 for scalability."
- **Creative Prompt** – "Write a futuristic story about home automation in India."

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Some real-world examples of AI tools using prompt engineering...

- AI coding assistants, like GitHub Copilot, rely on structured prompts to generate usable code snippets, debug code, or provide suggestions based on the programming language it detects.
- AI chatbots, like Zendesk, use prompt engineering to create customized responses for customer interactions.
- AI design tools, like Canva's AI assistant, uses internal prompts to recommend templates, color schemes, and layouts tailored to that theme.

Use Basic Prompt Engineering Techniques:

- Refine the prompt by adding a role and audience.
- Specify the desired output format.
- Encourage clarifying questions.
- Use decomposition to break down complex prompts.
- Observe the changes in the AI's response.

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Intermediate Prompting Techniques:

In this step, you're going to,

- Experiment with prompt chaining.
- Use the self-critique technique.

💡 What is prompt chaining?

Prompt chaining uses the output of one prompt as input for the next. This lets the AI model build on previous responses. This often generates a more detailed final response

Self-Critique:

- Analyze my previous responses – Identify any gaps, biases, or areas where my explanation could have been clearer or more accurate.
- Provide alternative perspectives – Offer different angles or ways of thinking about a problem.
- Refine my answers based on feedback – Adjust explanations to make them more precise, simple, or detailed depending on your needs.

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Specialized Prompting Techniques:
In this step, you're going to:

- Apply reverse engineering to work backwards from the goal.
- Use creative frameworks to shape outputs effectively.

💡 What is reverse engineering in prompt crafting?

Reverse engineering is a technique where you start with a specific output you want and work backwards to design a prompt that produces it.

💡 What are some popular frameworks?

Problem-Solution-Benefit: Address a challenge, propose a solution, and highlight the benefits.

- Example: "Use the Problem-Solution-Benefit framework to guide aliens struggling with human social norms at tech conferences."

Before-After-Bridge: Describe the current state, the improved state, and the steps to achieve it.

- Example: "Explain how aliens can transition from clueless attendees to confident tech conference participants using the Before-After-Bridge framework."

STAR Framework (Situation-Task-Action-Result): A storytelling structure to describe processes or accomplishments.

- Example: "Using the STAR framework, describe how aliens can prepare for and succeed in a tech conference networking session."

AIDA Framework (Attention-Interest-Desire-Action): A classic marketing framework to persuade customers.

- Example: "Use the AIDA framework to create a persuasive guide for aliens convincing humans to collaborate at a tech conference."

SCQA Framework (Situation-Complication-Question-Answer): A framework for describing complex problems and their solutions.

- Example: "Use the SCQA framework to explain how aliens can overcome cultural misunderstandings at a tech conference."

Five W's and One H (Who, What, When, Where, Why, How): A straightforward framework for exploring a topic comprehensively.

- Example: "Explain how aliens can confidently interact at a tech conference using the Five W's and One H framework."

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Building a Meta-Prompt:

Creating a Meta-Prompt

- Start a new chat with ChatGPT.
- Tell ChatGPT to become your personal prompt generator. Provide guidelines based on the techniques you've learnt today, like:
  - Defining a role and audience.
  - Structuring outputs in a specific format, tone and style.
  - Asking clarifying questions before generating a prompt.
  - Using decomposition to break down complex prompts.
  - Experiment with prompt chaining.
  - Using the self-critique technique.
  - Applying reverse engineering to work backwards from the goal.
  - Suggesting frameworks that are most suited to answer the question.

For Any references :
https://learn.nextwork.org/projects/ai-promptengineering-beginner?track=high