

Prompt Engineering Manual

What am I reading?

This Prompt Engineering Manual is your essential guide to creating effective prompts for AI models. It covers key concepts, practical techniques, and tips to help you craft prompts that yield accurate and useful results.

Whether you are new to prompt engineering or seeking to refine your skills, this manual offers the essential knowledge required.

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1. Key Terms

- **Prompt engineering** - the process of creating and refining queries (prompts) to achieve desired results when working with language models.
- **Prompting** - is the way we ask an AI to do something.
- **Prompt/Input** - a text-based (or with image) input that is given to a language model to guide its output.
- **AI model** - is a computer program that uses algorithms to make informed decisions and predictions based on new data.
- **Output** - the response or data produced by an AI system as a result of processing the given input, which can include text, images, or other forms of generated content.
- **Token** - the smallest unit of text that an AI system can process, which can be a letter, part of a word, or an entire word.
- **Max Tokens** - the maximum number of tokens that an AI system can handle in a single operation, encompassing both the input and output.
- **Large Language Models (LLMs)** - a subset of GenAI systems, specifically deal with textual data. They are trained on extensive text databases of text, learning language patterns, syntax, and context.
- **Generative AI** - a type of AI that creates new content, such as text or images, rather than performing specific tasks like prediction or classification.

2. Prompt Engineering

Prompt engineering – improving prompt quality through various techniques. It involves designing and structuring the input or “prompt” that is fed into the model in a way that guides the model’s response. It is crucial to mention, that the response quality from AI models depends on the quality of the prompt provided.

2.1 Ground Rules of Prompt Engineering

1. Be specific and precise.

- Clearly define the problem or aim.
- Use relevant keywords and phrases.
- Adding more criteria leads to better outputs.

2. Work in steps.

- Break down work into smaller parts. This produces higher quality outcomes, exactly like it would with a human.

3. Iterate and improve.

- Rework inputs and let the AI model enhance its own output.

2.2 How to Effectively Create Prompts

1. Define the objective.

Clearly define what you want to achieve with the prompt. Is the main task to generate creative text, get information, or solve a problem? Example of this would be: “Generate a short, imaginative story for children aged 7-10. ”

2. Be specific and clear.

Avoid ambiguity and jargon unless it’s relevant to the task, but rather try to be simple and precise. For instance: “Write a short story about a young girl who discovers a magical forest in her backyard. The story should include at least one talking animal and a lesson about

friendship. Keep the story between 300-500 words”. It is simply showed in this example, how much details should be added to a model, to achieve better response.

3. **Add Context.**

Include any relevant background information that may influence the response. Context ensures that the model’s output matches the user’s purpose. The example of this would be:

“In a small coastal town during the 19th century, a young fisherman discovers a mysterious artifact. Describe his journey as he seeks to uncover its origins and the secrets it holds”.

This prompt sets a clear historical and geographical context, providing a specific scenario for the model to build upon. A thing to remember is that without context, prompts might be interpreted in various ways, sometimes leading to irrelevant or confusing responses.

4. **Use Examples.**

Show examples of desired responses or outcomes to guide models understanding (latter you will learn that there is a prompting technique for it called – few-shot prompting).

Sometimes showing what to avoid can also be helpful in a certain topic: “Avoid stories that are too scary” or “do not include inappropriate content for children.”

5. **Give the model a persona.**

Describe the model’s role (such as being a teacher, doctor, or consultant) and level of knowledge. This ensures that the responses are relevant and sufficiently comprehensive.

For example, you can start your prompt: “I want you to act as a...”. For a better outcome you can also define the model’s personality characteristics (“In a _____ tone/style...”). It could be welcoming, professional, entertaining, compassionate etc. This helps to shape the tone and style of replies.

6. **Encourage creativity and open-ended responses.**

You can frame questions or prompts that encourage expansive thinking and responses as well as indicate where creativity is encouraged and where precision is required from a model.

7. Ask clarifying questions.

If you didn't understand one of the bullet point answers, that the AI model provided, you can always ask for it to elaborate on that thought, give explanations or provide examples of a certain topic.

8. Ask help from AI.

Use AI to generate initial versions of your prompts or to provide suggestions for improvement. For example, you can write to the model: "Ask me 5 questions that will improve the response you will be giving me."

9. Test and refine.

Try out the prompt with a small group or through a few iterations and gather feedback. Once you have feedback on your work, adjust the prompt based on it to better meet your objective.

2.3 Prompt Basis

Here are the basic examples of prompts:

1.

Create a [task]	Act as a [role]	Show as [format]	Respond in a [tone]	[Restrictions]	[Extra]
Write an article	Journalist	Short Summary	Formal, informative and academic	Write only in short and informative sentence	Ask me questions before answering

You are a **journalist** who needs to write an **article** about fintech companies. At the end of the article make a **short summary** of it. The writing style must be **formal, informative and academic**. **Write only in short and informative sentences**. If you need any more detail, make sure you **ask me questions before answering** to my request.

2.

Create a [task]	Act as a [role]	Show as [format]	Respond in a [tone]	[Restrictions]	[Extra]
Develop a Comprehensive Marketing Strategy	Project Manager	Detailed Report	Professional and encouraging tone	Use only formal business language and write only in short sentences	Include visuals like charts or graphs to illustrate the plan

Develop a comprehensive marketing strategy for the Q3 product launch, acting as the **project manager**, and present the strategy in a **detailed report**, responding in a **professional and encouraging tone**, with restrictions to use **only formal business language and write only in short sentences**, including visuals like **charts or graphs to illustrate the plan**.

3.

Create a [task]	Act as a [role]	Show as [format]	Respond in a [tone]	[Restrictions]	[Extra]
Delegate the responsibility of planning	Event coordinator	Calendar	Friendly and informative tone	Use concise language and provide a step-by-step guide	Include extra suggestions

As the **event coordinator**, **delegate the responsibility of planning** the annual conference, illustrating the event schedule in a **calendar** format, responding to inquiries in a **friendly and informative tone**, with restrictions to use **concise language and provide a step-by-step guide**, including **extra suggestions** for potential guest speakers.

2.4 Practical Everyday Prompts

Generative Creative Concepts

Prompt Formula:

I'm aiming to deepen my knowledge into [subject] in a [format]. Could you suggest [topics] I could explore?

Examples:

Question 1:

I'm aiming to explore **blockchain** in a **blog**. Could you suggest 3 topics, such as the different types of **blockchain networks and real-world applications of blockchain beyond cryptocurrency**, I could explore?

Answer 1:

Certainly! Blockchain technology has a wide array of applications and nuances that make it a rich subject for exploration in a blog. Here are three engaging topics you could delve into:

1. Understanding the Different Types of Blockchain Networks:

- **Public vs. Private Blockchains:** Discuss the differences between public blockchains like Bitcoin and Ethereum, which anyone can join and participate in, and private blockchains where access is restricted to specific individuals or organizations.
- **Consortium Blockchains:** Explore the middle ground between public and private blockchains, where a group of organizations governs the network, and participation is by invitation only.
- **Hybrid Blockchains:** Introduce the concept of hybrid blockchains which attempt to use the best features of both private and public blockchains. Explain scenarios where a hybrid approach is beneficial and how it works in practice.
- **Sidechains and Layer 2 Solutions:** Explain the role of sidechains and layer 2 solutions in enhancing scalability and functionality in blockchain networks.

This excerpt is just a portion of the full Microsoft Azure AI Studio platform, deployment model gpt-4o response. For a complete understanding, the readers are encouraged to try their own questions and see how the AI responds in full.

Question 2:

I'm aiming to deepen my knowledge into decentralized finance (DeFi) in an e-book. Do you have any suggestions on topics I can cover, such as how smart contracts work and the potential risks and benefits of DeFi platforms?

Answer 2:

Creating an e-book on decentralized finance (DeFi) is a fantastic way to explore this innovative and rapidly evolving space. Here are some topics you can cover, which would provide a comprehensive view of DeFi:

1. Introduction to DeFi

- Definition and explanation of DeFi
- Historical context and the evolution of DeFi
- Comparison with traditional finance (CeFi)

2. Blockchain Fundamentals

- Overview of blockchain technology
- How blockchains enable DeFi
- Consensus mechanisms (Proof of Work, Proof of Stake, etc.)

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Prompt Formula:

I'm looking for [type of text] that emphasizes the advantages of [subject]. Could you create [no.] pieces for me on [subject]?

Examples:

Question 1:

I'm looking for a social media post that emphasizes the advantages of our AI-driven analytics platform. Could you create three pieces for me on the real-time data insights and predictive capabilities of the platform?

Answer 1:

Certainly! Here are three social media post drafts that highlight the advantages of your AI-driven analytics platform, focusing on real-time data insights and predictive capabilities:

Post 1: Real-time Data Insights

🚀 Transform your decision-making with the power of AI! 🧠 Our analytics platform gives you real-time data insights that keep you a step ahead. ✅

- ✅ Instant analysis of trends
- ✅ Lightning-fast reporting
- ✅ Data-driven decisions in a snap

Stay ahead of the curve and make informed decisions when it matters most. Dive into a sea of data and emerge with actionable insights—just like that! 🌊💡

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Question 2:

I'm interested in a **blog post** that highlights the key features of **my new app**. Please write **one** for me on the **user-friendly interface and innovative functionalities of the app**.

Answer 2:

Certainly! Below is a sample blog post that you can use to highlight the key features of your new app:

Title: Discover the Future of User Experience with Our New App!

Introduction:

In the ever-evolving landscape of mobile applications, standing out requires more than just a novel idea. It demands a seamless blend of user-friendly design and cutting-edge functionality that together redefine what users expect from their apps. We're excited to announce the launch of our new app, which is poised to do just that—offering an experience that is as intuitive as it is innovative. Read on to discover how our app is setting a new standard for user interfaces and functionalities in the digital world.

A User Interface That Understands You:

From the moment you launch our app, you're greeted by a clean, uncluttered interface that feels both familiar and fresh. We've distilled the essence of great design into an interface that eliminates complexity, making navigation effortless for both seasoned tech enthusiasts and first-time users.

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Mass Content Development

Prompt Formula:

Could you create [no. of content] [type of content] for [platform] that incorporates [references]?

Examples:

Question 1:

Could you create 3 social media posts for LinkedIn that incorporates infographics and research findings on the latest advancements in fintech?

Answer 1:

Certainly! Below you'll find three examples of LinkedIn social media posts that incorporate infographics and research findings on the latest advancements in fintech. Please note that actual infographics cannot be created within this text format, but I will describe what they would entail:

Post 1: The Rise of Blockchain in Banking

🌟 *New Research Alert: Blockchain Revolution in Banking!* 🌟

The latest report from [Your Company's Name] reveals a seismic shift in the financial industry, thanks to blockchain technology. Our infographic breaks down the complex world of blockchain into digestible stats that showcase its growing impact:

📊 **Infographic Highlight:**

- 70% of financial institutions are exploring potential use cases for blockchain.
- Cross-border transactions facilitated by blockchain technology have risen by 50% in the last year.

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Question 2:

Please come up with 2 blog posts for my fintech solutions website that includes case studies and financial data analysis.

Answer 2:

Certainly! Below are two outlines for blog posts that include case studies and financial data analysis for your fintech solutions website. Each outline will suggest a structure for the blog post and the kind of content that should be included.

Blog Post 1: Revolutionizing SME Lending with AI-Powered Risk Assessment - A Fintech Success Story

Introduction:

- Briefly introduce the challenges SMEs face when seeking loans from traditional financial institutions.
- Mention the emergence of fintech solutions aimed at improving access to credit for SMEs.

The Challenge:

- Discuss the traditional credit scoring models and their limitations, especially for SMEs.
- Highlight the need for a more nuanced and real-time approach to assessing creditworthiness.

Fintech Solution:

- Introduce the fintech company's AI-powered risk assessment tool.
- Explain how it uses alternative data sources and machine learning algorithms to evaluate credit risk.

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Customers Interaction Scenario

Prompt Formula:

As a customer support assistant who is [characteristic], how would you address [individual] as a representative of our [type] company?

Examples:

Question 1:

As a customer support assistant who is detail-oriented, how would you address a customer inquiring about the security features of our blockchain platform as a representative of our blockchain technology company?

Answer 1:

Certainly! Addressing a customer's inquiry about the security features of a blockchain platform would involve a careful and comprehensive response, highlighting the various measures and protocols in place. Here's how I would approach it:

Initial Greeting and Acknowledgement:

Hello [Customer's Name],

Thank you for reaching out to us with your concerns about the security of our blockchain platform. I understand how critical it is to ensure that your data and transactions are secure, and I'm here to provide you with detailed information about the security features we have implemented.

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Question 2:

I want you to act as a customer support assistant who is **tech-savvy and friendly**. How would you help **a customer who is unable to access their mobile wallet** as a representative of our **digital finance** app?

Answer 2:

Of course! As a tech-savvy and friendly customer support assistant, I would approach the situation as follows:

Initial Greeting and Information Gathering:

1. Greet the Customer Politely:

- "Hello! Thank you for reaching out to [Your Company's Name] support. My name is [Your AI Assistant's Name]. I'm here to help you with your mobile wallet issue. Can you tell me a bit more about what's happening when you try to access your wallet?"

2. Identify the Customer:

- "For your security and to assist you better, could you please confirm some details such as your full name, and the email or phone number associated with your account?"

3. Understand the Issue:

- "Could you describe the issue you're facing in a bit more detail? For example, are you receiving any error messages, and if so, what do they say? When did this issue start?"

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Simplify Concepts with Analogies

Prompt Formula:

I'm looking to acknowledge the concept of [concept] better. Could you provide a practical and easy analogy to better understand this concept?

Examples:

Question 1:

I'm trying to better understand the concept of MVP (Minimum Viable Product). Could you provide a practical and easy analogy to better understand this concept.

Answer 1:

Sure, let's use the analogy of opening a new pizza restaurant to understand the concept of an MVP, or Minimum Viable Product.

Imagine you're an entrepreneur who wants to open a pizza place.

The Grand Vision:

You dream of a restaurant that offers a wide variety of gourmet pizzas with exotic toppings, an array of Italian desserts, a full bar with craft beers and fine wines, and even live entertainment on the weekends.

The MVP Approach:

Instead of investing all your money and time to launch the full vision from the start, you decide to test your concept with a simpler version to see if people even like your pizza.

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Question 2:

I'm looking to acknowledge the concept of a **startup pivot** better. Could you provide a practical and easy to understand analogy for this concept?

Answer 2:

Certainly! Think of a startup like a ship on a vast ocean. The initial business idea is the chosen course the ship is set to sail, with the goal of reaching a specific destination — success in the form of a profitable, sustainable business.

As the ship embarks on its journey, the crew (the startup team) may encounter unexpected conditions like rough seas (market changes), winds blowing off course (new competition), or even discover that their original map (business plan) was based on incorrect assumptions.

A pivot is akin to the captain (founder/CEO) deciding to adjust the ship's course in response to these new insights or conditions. Instead of plowing ahead stubbornly on the original path, risking the entire venture, the captain makes a strategic decision to change direction.

This could mean:

1. Slightly adjusting the angle (tweaking the product features or target audience),
2. Turning the ship around to catch a favorable wind (shifting the business model or revenue strategy), or
3. Heading to a different destination altogether (redefining the company's value proposition or entering a new market).

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3. Prompting Techniques

Technique 1

Zero-Shot Prompting

A technique where a language model generates text for a new task without any specific training on that task. No previous data or guidelines given before completing request.

Example

Can you provide a recipe for a delicious chocolate cake?

Technique 2

One-Shot Prompting

One-Shot prompting is a technique, that is used to generate natural language text with a limited amount of input data, such as a single example or template.

Prompt Formula

Reference: [Insert a specific example of a blog posts here]

Now, based on this reference, write a blog post for my company's blog, about [Insert the specific theme or topic here]

Example

Reference: Example Blog Post: "The Importance of Cybersecurity in Small Businesses".

Based on this reference, write a blog post for my company's blog, about "The Impact of Remote Work on Employee Productivity".

Technique 3

Few-Shot Prompting

A technique, where multiple pieces of data or guidelines are given before completing request.

Prompt Formula

Using these [Examples 1, 2, 3] as reference, write a LinkedIn post on the impact of artificial intelligence (AI) in modern business practices for my professional network. Start with a compelling introduction and include bullet points for each main benefit. Include a quote or statistic for each main point.

Technique 4

Chain-of-Thought Prompting

The chain-of-thought technique is a method used in problem-solving and learning where one idea leads to the next, forming a 'chain' of thoughts, while answering in a step-by-step format. It encourages continuous exploration and connection of concepts, fostering deeper understanding and innovative solutions.

Prompt Formula

[Your question]. Let's break it down step by step. (Zero-shot CoT).

Example

What is the best way to get a job at a startup company? Let's think step by step.

Technique 5

RGC Prompting

This framework includes several different factors such as an AI role, the expected result, goal, context, and constraints added in one place, so that the model can effectively understand and respond to prompts with greater accuracy and relevance. By integrating these elements, the RGC prompting technique ensures a comprehensive approach to guiding AI behavior, ultimately leading to more precise and context-aware outcomes.

Prompt Formula

Role: You are a(n) [Role], who is [additional characteristics or abilities related to the role]. Your goal is to [Goal]. The desired result is [Result]. Given the context that [Context], however, you must adhere to the following constraints: [Constraint].

Example

You are a professional chef, who is known for creating innovative fusion dishes. Your goal is to create a new recipe. The desired result is a detailed recipe with ingredients and step-by-step instructions. Given the context that the dish should be a fusion of Italian and Thai cuisines, however, you must adhere to the following constraints: The dish must be vegetarian and should not include any form of nuts due to allergy concerns.

Role

ChatGPT's persona (You are a fifth graders teacher, which teaches math).

Goal

Purpose of the output (The goal is to sell 5 phones at the end of this week).

Constraint

Limitations and guidelines (The blog post needs to be written in a friendly yet academical tone and the maximum number of words is 2000).

Result

Desired output (Create 5 LinkedIn posts, that is in theme of reverse prompt engineering).

Context

Who, what, where, why (I am a dedicated marine biologist, that discovered a new species of bioluminescent jellyfish off the coast of the Maldives, in a deep-sea trench. I am on an expedition funded by the Oceanic Conservation Institute to study the effects of climate change on deep-sea ecosystems).

Technique 6

Self-Consistency Prompting

Self-consistency prompting is a technique that helps models to generate responses that are consistent with their previous outputs. This technique is particularly useful in situations where models need to generate long and complex sequences of text. The key is to repeatedly ask a model the same question/prompt and take the most repetitive feedback as an answer.

Prompt Formula

- Imagine [n] completely different experts who reason differently are answering this question [question]. The final answer is obtained by majority vote.
- Generate [text] that is consistent with [the reference text].

Examples

- Imagine 5 completely different experts who reason differently are answering this question How can renewable energy sources be integrated into the existing power grid to ensure reliability and efficiency? The final answer is obtained by majority vote.
- Generate a concluding paragraph that is consistent with the introduction and body paragraphs of an essay discussing the benefits of urban green spaces for mental health.

Technique 7

Tabular Format Prompting

The tabular format prompting technique is a method used in AI language models where the input is structured in a table-like format to provide clear instructions. It helps in guiding the model's responses, making them more predictable and controlled by specifying the context, user messages, assistant messages, and tool invocations in separate rows or columns.

Prompt Formula (all statements must be used step by step)

- 1 [Your initial question or topic].
- 2 Identify and list the main categories or dimensions that can logically organize the information needed to answer the question.
- 3 Create a comprehensive table. This table should include:
 - A column for each identified category.
 - Rows filled with the specific details or data points related to the question, organized under the appropriate category columns.
- 4 Ensure that each cell in the table contains relevant and concise information that directly addresses the original question within the context of its category.
- 5 Provide a brief summary or conclusion based on the organized data in the table, highlighting key insights or findings.

Technique 8

Comparative Prompting

Comparative prompting is a strategy for prompting responses that compare and contrast various items, concepts, or scenarios. This strategy assists when evaluating the similarities and contrasts between the subjects under consideration, making it especially beneficial in decision-making, educational settings, and analytical writing.

Prompt Formula

Compare and contrast [Item A] and [Item B], considering factors such as [Factor 1, Factor 2, and Factor 3]; discuss how [Item A] and [Item B] differ in terms of these factors, and then summarize the main advantages and disadvantages of [Item A] and [Item B] based on the factors considered.

Example

Compare and contrast Python and Java, considering factors such as readability, performance, and use cases. Discuss how Python and Java differ in terms of these factors, and then summarize the main advantages and disadvantages of Python and Java based on the factors considered.

Technique 9

Ask Before Answer Prompting

This technique is a method used in AI model training where the model is first asked a question, and then provided with the answer. This technique helps the model to understand the context of the question and learn how to generate appropriate responses.

Prompt Formula (all statements must be used step by step)

- 1 You are a seasoned professional with expertise in [industry or specific field]. Before proceeding with my task, I want you to ensure complete clarity. If you have any doubts or need further information to provide the best possible response, always ask specific clarifying questions first. Do you understand this approach?
- 2 Excellent! Here is my question: [question]. The specific task I need you to accomplish is [task]. Please list any questions you have that can help refine my prompt before you begin working on the task.

Example

Excellent! Here is my question: How can we optimize our website's SEO to improve its search engine rankings? The specific task I need you to accomplish is: conduct an SEO audit of our current website, identify key areas for improvement, and provide specific recommendations for enhancing our on-page and off-page SEO. Please list any questions you have that can help refine my prompt before you begin working on the task.

Technique 10

Fill-in-the-Blank Prompting

The fill-in-the-blank prompting technique is a method used in AI language models where a sentence is given with a blank, and the model is tasked to fill it with appropriate content. This technique is useful for generating specific responses, as it guides the model's focus towards a particular context or topic. It's like a game of Mad Libs, where the AI is given a sentence structure and it needs to complete it in a way that makes sense and is contextually relevant.

Prompt Formula (all statements must be used step by step)

- 1 As an expert in prompt optimization, analyze the following prompt and identify areas for improvement to enhance its clarity and effectiveness: [your prompt].
- 2 List and explain specific enhancements in bullet points that will make the prompt more precise and resourceful.
- 3 Now, create a fill-in-the-blank template incorporating these enhancements, allowing for easy insertion of custom information.

Example

As an expert in prompt optimization, analyze the following prompt and identify areas for improvement to enhance its clarity and effectiveness: "I need you to come up with a way for AI to help evaluate students' scientific essays. Outline step by step how an expert would be created to evaluate a student's work."

Technique 11

Perspective Prompting

A framework is used in AI language models where the model is given a specific 'persona' or 'perspective' to follow while generating responses. This perspective, defined in the prompt, guides the model's responses to align with a certain tone, style, or set of guidelines.

Prompt Formula

- **Singular Perspective:** As a/an/the [Perspective], [Task].
- **Multiple Perspectives:** Could you provide a discussion [in favor of/against] the subject of [subject] from various distinct viewpoints? Please incorporate the identities and perspectives of the different viewpoints, such as [viewpoints].

Example

Singular Perspective: As a technology expert, explain the concept of blockchain in simple terms.

Multiple Perspectives: Could you provide a discussion in favor of the subject of 'Artificial Intelligence in Education' from various distinct viewpoints? Please incorporate the identities and perspectives of the different viewpoints, such as a teacher, a student, and a school administrator.

Technique 12

Tree-of-Thoughts Prompting

Tree of thoughts (ToT) prompting similarly breaks a problem into a sequence of smaller steps—or thoughts—that are solved individually.

Unlike traditional prompting methods that rely on a linear sequence of instructions, the ToT method organizes prompts in a hierarchical manner, akin to a tree structure, allowing for deliberate problem-solving.

Prompt Formula (all statements must be used step by step)

- 1 I have a problem related to [describe your problem area]. Could you brainstorm [number] distinct solutions? Please consider a variety of factors such as [Your perfect factors].
- 2 For each of the [number] proposed solutions, evaluate their potential. Consider their pros and cons, initial effort needed, implementation difficulty, potential challenges, and the expected outcomes. Assign a probability of success and a confidence level of each option based on these factors.
- 3 For each solution, deepen the thought process. Generate potential scenarios, strategies for implementing any necessary partnerships or resources, and how potential obstacles might overcome. Consider any potential unexpected outcomes and how they might be handled.

Technique 13

Constructive Critic Prompting

The attractiveness of this technique rests in its methodical approach to providing critique. Breaking down the content into separate parts allows for a detailed analysis of each piece. This strategy ensures that no aspects of your writing are ignored, resulting in a more thorough improvement process.

Prompt Formula

I want you to act as an expert and critic in the subject of [industry]. Please analyze and critique the content provided below. Convince me why it's lacking or flawed, and offer constructive criticism on how it can be improved. Here are some important details to consider:

- 1 My [product or service] is intended for [details, demographic, etc].
- 2 The purpose of my [product or service] is to [your content goal].

Please address each piece of content individually and think step-by-step. Here is the content to critique: [your content].

Example

I want you to act as an expert and critic in the subject of digital marketing. Please analyze and critique the content provided below. Convince me why it's lacking or flawed and offer constructive criticism on how it can be improved. Here are some important details to consider:

- 1 My service is intended for small business owners in the e-commerce sector.
- 2 The purpose of my service is to help small businesses increase their online sales through effective digital marketing strategies.

Please address each piece of content individually and think step-by-step. Here is the content to critique: [enter your content].

Technique 14

Reverse Prompting

Reverse prompt engineering is the process of analyzing the output of a generative AI model to infer the original prompt or input that could have led to that specific output. This technique can be used to understand how the model interprets various inputs and generates corresponding outputs.

Prompt Formula

Option 1 (all statements must be used step by step):

- 1 You are an expert in reverse engineering prompts. I will provide [type of content]. Give a specific prompting suggestion based on tone, style, syntax, and language to replicate the provided text. Your prompt is effective if it guides an AI model to produce a similar script. Reply 'understood' if clear; otherwise, ask for clarification.
- 2 Great, the text that I would like you to reverse engineer is [content].

Option 2 (all statements must be used step by step):

- 1 Let's talk about reverse prompt engineering. By reverse prompt engineering, I mean creating a prompt from a given text. Can you give me a simple example of reverse prompt engineering?
- 2 Great. Can you create a very technical reverse prompt engineering template?
- 3 Now reverse prompt engineer the following [your text]. Be sure to capture the tone, syntax, language, and writing style of the text for the prompt you come up with.

4. Hyperparameters in AI models

Hyperparameters are critical elements that define the behavior and functionality of AI models. Think of them as settings or configurations that the model uses to generate responses or make predictions. Adjusting hyperparameters like temperature or top-p can significantly impact the model's output and accuracy.

Hyperparameters:

< Temperature >

The temperature of the model controls randomness. Lowering the temperature means that the model will produce more repetitive and deterministic responses, while increasing the temperature will result in more unexpected or creative responses. (Try adjusting temperature or Top P but not both.)

< Top_p >

It determines the number of highest-probability words that are chosen to be part of the created text. A higher value (e.g., 0.95) will lead to more diverse text, while a lower value (e.g., 0.5) will generate more focused and conservative text. Increasing Top P will let the model choose from tokens with both high and low likelihood.

< Maximum length/response >

The maximum number of tokens to generate shared between the prompt and completion. The exact limit varies by model. (One token is roughly 4 characters for standard English text).

< Stop sequence >

Make the model end its response at a desired point. The model response will end before the specified sequence, so it won't contain the stop sequence text. Up to four sequences where the API will stop generating further tokens.

< Frequency penalty >

This parameter controls the repetition of words or phrases in the generated text. A higher value (closer to 1) encourages the AI to avoid repeating words, while a lower value (closer to 0) allows for more repetitions.

< Presence penalty >

Affects the model's likelihood of returning to a previously mentioned topic or idea. A low presence penalty (near to 0) indicates that the model is more likely to stick with the same topic or reuse concepts, whereas a high presence penalty (close to 1) encourages the model to add new topics and ideas.

Examples :

Temperature

Example #1

Low Temperature (0):

"My favorite food is pizza."

High Temperature (1):

"I oscillate between the zest of Thai green curry and the comforting embrace of Argentinian empanadas, but the symphony of flavors in a Moroccan tagine often pirouettes into the lead."

Example #2

Low Temperature (0):

"My ideal vacation is a week at the beach, relaxing under the sun with a good book."

High Temperature (1):

"My dream vacation would take me on a whirlwind adventure, from exploring the ancient temples hidden deep in the jungles of Cambodia to sipping a fresh coconut while swaying in a hammock on a secluded beach in the Maldives, all topped off with an impromptu salsa lesson under the stars in Havana."

Frequency Penalty

Example #1

Low Frequency Penalty (0):

"I really, really, really like this product. It's really amazing and really easy to use."

High Frequency Penalty (1):

"I'm genuinely impressed with this product. It's incredible and user-friendly."

Example #2

Low Frequency Penalty (0):

"The sun sets low in the sky,
The sun's warm glow begins to die,
The sun's rays fade, as night draws
nigh,
The sun, the sun, it whispers
goodbye."

High Frequency Penalty (1):

"The sun sets low, a fiery orb descending,
Horizon swallows light, day's end impending,
Twilight paints the clouds, hues softly
blending,
Stars peek through the veil, night's veil
ascending."

Example #3

Low Frequency Penalty (0):

"Have a costume party.
Organize a costume competition.
Encourage guests to wear
costumes.
Give out prizes for the best
costumes."

High Frequency Penalty (1):

"Host a mystery-themed escape room
challenge.
Arrange an outdoor movie night with a
projector.
Plan a scavenger hunt with personalized
clues."

Presence Penalty

Example #1

Low Presence Penalty (0):

“Renewable energy is essential for sustainable development. Renewable energy sources like solar and wind are inexhaustible and can help reduce carbon emissions. Renewable energy technologies are becoming more cost-effective and can be deployed at scale. The transition to renewable energy is critical for combating climate change.”

High Presence Penalty (1):

“Renewable energy is essential for sustainable development. As we harness the power of the sun and the force of the wind, we must also consider the role of hydroelectric and geothermal resources. Innovations in energy storage and smart grid technologies are equally important to ensure a stable and reliable energy supply. Furthermore, policy frameworks and economic incentives are key to accelerating the adoption of green technologies.”

Example #2

Low Presence Penalty (0):

“The beach has soft, white sand and beautiful blue waters. The white sand feels warm underfoot, and the sound of the gentle waves is calming. Families enjoy the sand, building sandcastles and playing volleyball.”

High Presence Penalty (1):

“The beach offers a tranquil escape with its turquoise waves lapping against the shore. Seagulls soar above as the breeze carries the scent of saltwater. Sunbathers relax while children explore the nearby rock pools.”

5. Tips for a Better Prompting Experience

- Recency bias can affect models, where **information located towards the end** of the prompt can have more influence on the output than information at the beginning.
- A specific technique for formatting instructions is to **split the instructions** at the beginning or end of the prompt and have the user content contained within --- or ### blocks. These tags allow the model to more clearly differentiate between instructions and content.
- Research has shown that giving your AI **words of encouragement** can help it perform better. For example, offering bonuses or rewards for good results can yield better results.
- OpenAI suggests **separating instructions from the context** through a break in the prompt or using quotation marks to reference textual elements from the context.
- Using a **verb at the beginning** of the prompt provides a better model output.
- Breaking down complex tasks into **step-by-step instructions** can improve the quality of the output. For example, first ask for an outline, then request detailed content for each section.
- **Avoid negative language.** Instead of saying what not to do, instruct the model what it should do.
- **Ask AI its opinion.** Before getting an answer, ask AI for it to ask clarifying questions for a better output.
- Formulating **open-ended questions** encourages the AI to generate more comprehensive and detailed responses.
- Use **causative language** to transform prompts, such as saying: “Take the concepts and information from the description above and reimagine them as a song.”, instead of simply saying: “Turn the description above into a song.”

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