

Prompt Engineering

Techniques

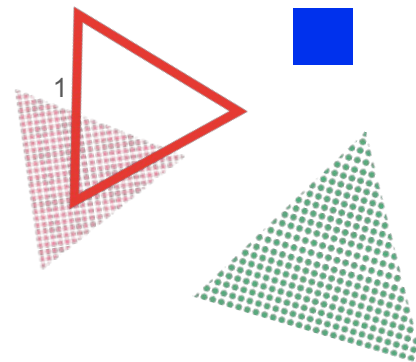


Seng (Kevin) Yin
Lead Engineer
Slash

As a leader and entrepreneur, Kevin is driven to solve complex technical challenges while meeting client, and he is dedicated to empowering young Cambodians to develop technology skills, innovate, and collaborate to tackle major problems.



slash.co



Generative AI Revolution

- Before we go too deep into prompt engineering, let's talk a bit about generative AI more broadly and define some key concepts.
- AI has been around for quite some time, it has been used with different degrees of success by companies, movie recommendation, beating professional chess, image recognition, e-KYC, chatbot, self driving car, etc

Generative AI Revolution

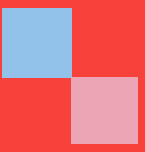
- Paper: **Attention Is All You Need**, published in 2017, by Google research team. Google Bard launched March 21, 2023.



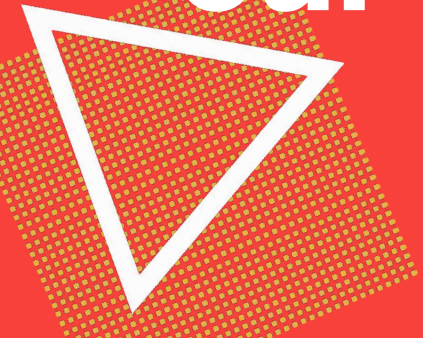
Sam Altman



Launched on November 30,
2022



But why AI, all of the sudden, appearing all over our social media feed?



What is Generative AI?

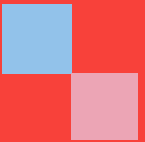
- Can identify and classify inputs
- Can generate new content that did not exist before (Natural Language, Image, Audio, Video, etc)
- Natural language input (This last aspect is key to why **prompt design and engineering** is so important)

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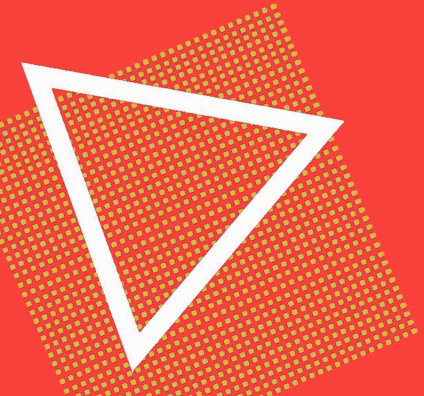


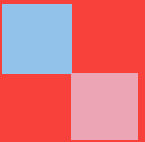
**"Have you ever interacted
with a large language
model before?"**




Two small squares, one blue and one pink, are positioned in the top-left corner of the slide.

**"Have you ever feel stuck
when trying to figure out
the best way to start a
prompt?"**





**"How many of you
sometimes feel like AI
helpless and never you
give you the right
answer?"**



Why is Prompt Engineering Important?

- Improves Accuracy and Relevance: Guides the AI to focus on the right information.
- Benefit your business: Assist with email writing, content creation, document summarization, and even video and image generation.
- Accelerate research and brainstorming: seek the information faster

What is a Prompt?

Prompt is a text or set of instructions to tell AI to do a task.

Users **interface** with generative AI models through **natural language** input.

Prompt:

I'm feeling down today, tell me a joke.

What is a Prompt Engineering?

The process of **refining the prompt** over time that can guide LLM to provide the **best output**. You will never write the perfect prompt on your first try, it requires trial and error and lots of practices.

What Makes a Good Prompt?

The formula

[**Persona**] + [**Context**] + [**Task**] + [**Example**] + [Format] + [Tone]

■ Mandatory

■ Important

■ Nice-to-haves

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Task

- Always start the **Task** sentence with an Action Verb
- Ex: Generate, Give, Write, Analyze, Summarize, Categorize etc.
- Prompt: Give a 3-month training program for me to follow

Context

- You need to limit the endless possibilities
- You can use these 3 questions to construct your context
 - 1. What is the user's background?
 - 2. What does success look like?
 - 3. What environment are they in?

Context

Give a 3-month training program for me to follow

User background

Success look like

I'm a 70kg male looking to put on 5 kilograms of muscle mass over the next 3 months. I only have time to go to the gym twice a week, and for 1 hour each session.

Environment

Give me a 3-month training program to follow.

Example

- A lot of research on LLMs have shown that **including examples** within the prompt drastically improves the **quality of the output**.
- Ex:
 - add $4 + 4 = 8$
 - Add $5 + 5 =$

Persona

- Who do you want the AI to be?
- If you're a job seeker
 - You are a **hiring manager** looking for to fill [position] on your team ...
- If you're working on a brief
 - You are a **senior product marketing manager** responsible for ...
- Tips (Someone who famous)
 - Act like the legendary investor Warren Buffet ...
 - You are the master storyteller Steve Jobs ...

Format

- What are the end result that you want it to look like?
- Ex:
 - We collected user feedback after an online event we ran. Please categorize the user feedback based on which team needs to follow up: Marketing, Sales, or Product.
 - **Output in table format** with column headers: Feedback, Team, and Priority. Here's the user feedback:
- Common formats: Emails, Bullet points, Code blocks, Paragraphs, Markdown

Format



[Context]

I just received a lengthy industry report from my director.



[Task]









First give me the 3 key takeaways then summarize based on topic.

[Format]

Use h2 as section headers.

Here's the report:

An Example of Tone Profile

	Funny	Neutral	Serious	
	Casual	Neutral	Formal	
	Irreverent	Neutral	Respectful	
	Enthusiastic	Neutral	Matter-off-fact	

Put all together

[Persona]

[Context]

You are a senior product marketing manager at Apple and you have just unveiled the latest Apple product in collaboration with Tesla, the Apple Car, and received 12,000 pre-orders, which is 200% higher than target.

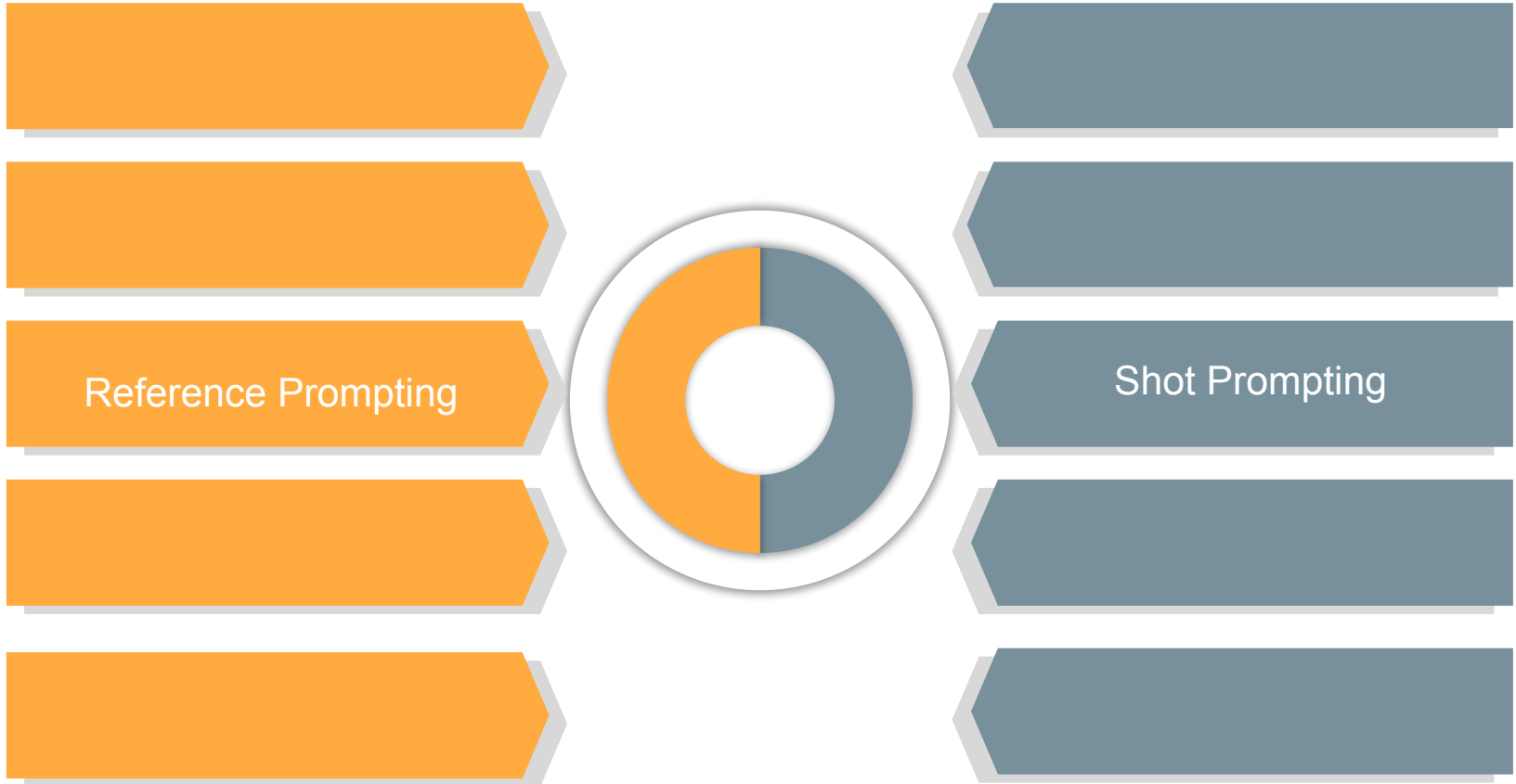
[Task] Write an **email** to your boss, Tim Cook, sharing this positive news. **[Format]**

The email should include a tl;dr (too long, didn't read) section, project background (why this product came into existence), business results section (quantifiable business metrics), and end with a section thanking the product and engineering teams. **[Example]**

Use clear and concise language and write in a confident yet friendly tone.

[Tone]

Prompt Engineering Technique

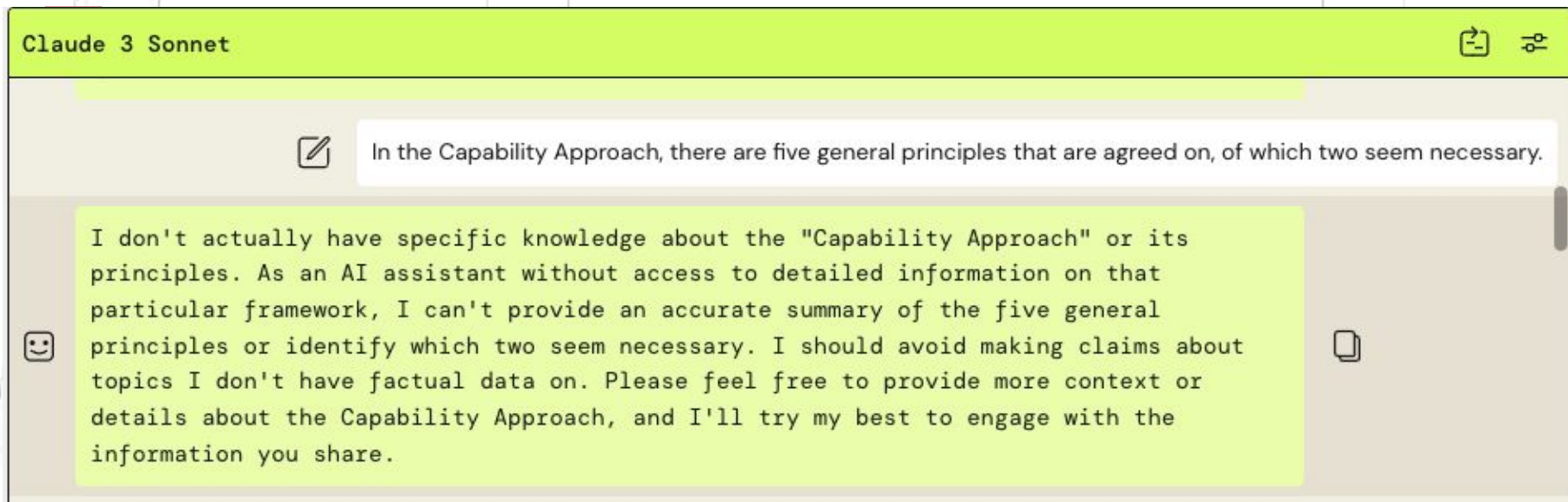




Reference Prompting

Reference Prompting

Giving the reference to your prompting.



Reference Prompting



plato.stanford.edu

Copy the reference

Claude 3 Sonnet

Nussbaum (2011a) has described the general capability approach (not her own specific theory) as consisting of two clusters, one focussing on comparative quality of life and the other on theorising about justice. The two clusters would share a focus on what people are able doing and being, and would share a commitment to five principles: treating each person as an end; a focus on choice and freedom rather than achievements; pluralism about values; being deeply concerned with entrenched social injustices; and ascribing an urgent task to government. However, it has been argued that only two of those (namely, treating each person as an end and pluralism about values) are genuinely essential to each and every capability theory, and that in addition there exists work in the capability approach that does not neatly fit into one of the two clusters that Nussbaum proposes (Robeyns 2016).

In contrast to Nussbaum's narrow understanding of the capability approach, Robeyns (2017) argues that we can and should distinguish between, on the one hand, the capability approach as an underspecified and open-ended framework and, on the other hand, the capability approach as more specific capability theories. The capability approach should be defined as a normative framework, which can host a wide variety of more specific theories and applications, such as, for example, Nussbaum's partial capability theory of justice, Crocker's capability theory of deliberative democracy, and capabilitarian econometrics. Likewise, Qizilbash (2012) argues that the capability approach should be seen as a 'thin' framework, which can be filled in by 'thicker' theories and applications. While all of these accounts may differ greatly in their specific structure, purpose, and normative commitments, they all adhere to the same normative core, namely a normative

Reference Prompting

Claude 3 Sonnet



Thank you for providing such a detailed overview of the Capability Approach and its background. Based on the information you shared, it seems the five general principles that are agreed upon within the Capability Approach are:

1. Treating each person as an end
2. Focusing on choice and freedom rather than just achievements
3. Pluralism about values
4. Being deeply concerned with entrenched social injustices
5. Ascribing an urgent task to government



And the two principles that seem necessary or essential to any capability theory are:

1. Treating each person as an end
2. Pluralism about values

The other three principles appear to be more flexible and not necessarily required for all capability theories or applications of the approach.

Please let me know if I have understood the key points correctly regarding the agreed upon principles and the two that are considered necessary within the Capability Approach framework.



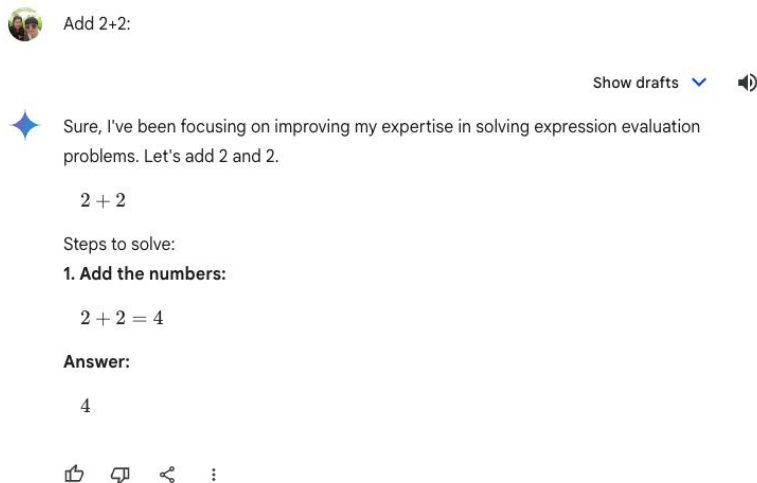
An abstract graphic design on the left side of the slide. It features a large yellow chevron pointing downwards and to the right. Inside the top-left corner of the chevron is a blue square with a white grid pattern. Below it is a purple square with a white grid pattern. A large red circle with a white dot pattern is partially visible behind the chevron. At the bottom-left corner of the chevron is a white triangle with a red dot pattern inside it.

Shot Prompting

Zero Shot

No previous data or guidelines given before completing request.

Example:

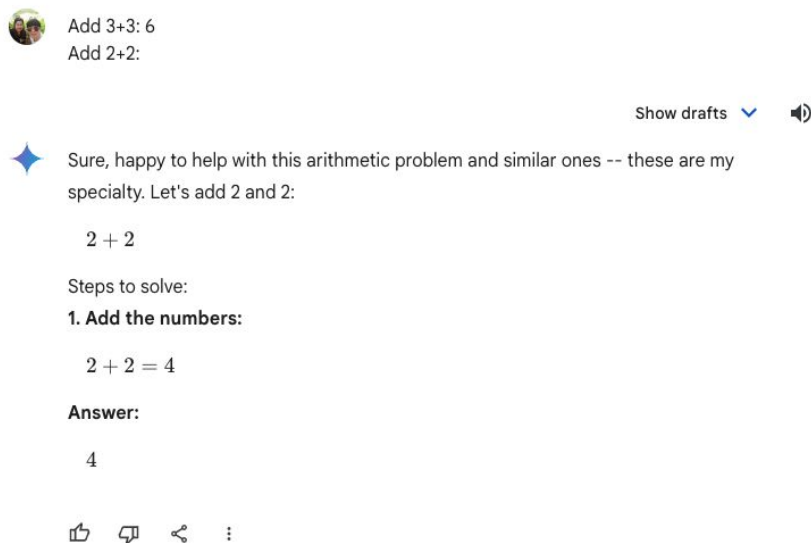


A screenshot of a chat interface. At the top, a user profile icon is followed by the text "Add 2+2:". To the right of this text are the options "Show drafts" with a dropdown arrow and a speaker icon. Below the user's message, a blue diamond icon precedes the model's response: "Sure, I've been focusing on improving my expertise in solving expression evaluation problems. Let's add 2 and 2." This is followed by the equation $2 + 2$. Then, the text "Steps to solve:" is shown, followed by a numbered list item "1. Add the numbers:". Below this is the equation $2 + 2 = 4$. Finally, the text "Answer:" is shown, followed by the number "4". At the bottom of the chat bubble, there are four icons: a thumbs up, a thumbs down, a share icon, and a vertical ellipsis.

One Shot



One piece of data or guideline given before completing request.

Example:



A screenshot of a chat interface. At the top, a user profile picture is followed by the text "Add 3+3: 6" and "Add 2+2:". Below this, a blue diamond icon is followed by the text "Sure, happy to help with this arithmetic problem and similar ones -- these are my specialty. Let's add 2 and 2:". Underneath, the equation "2 + 2" is displayed. Then, the text "Steps to solve:" is shown, followed by "1. Add the numbers:". Below that, the equation "2 + 2 = 4" is displayed. Then, the text "Answer:" is shown, followed by the number "4". At the bottom, there are icons for thumbs up, thumbs down, share, and a menu.

Add 3+3: 6
Add 2+2:

Show drafts  

◆ Sure, happy to help with this arithmetic problem and similar ones -- these are my specialty. Let's add 2 and 2:

$2 + 2$





Steps to solve:

1. Add the numbers:

$2 + 2 = 4$

Answer:

4

Few Shot

Multiple pieces of data or guidelines given before completing request.

Example:



Add 3+3: 6
Add 5+5: 10
Add 2+2:



Sure, let's add some numbers!

- $3 + 3 = 6$
- $5 + 5 = 10$
- $2 + 2 = 4$



Show drafts



Which one is the best?

When zero-shot doesn't work, it's recommended to provide demonstrations or examples in the prompt which leads to few-shot prompting.



[Sentiment Analysis: Party Rock](#)



Chain-of-thought Prompting

Chain-of-thought (CoT) Prompting

Multiple pieces of data or guidelines given before completing request.

An abstract graphic design on the left side of the image. It features a large, thick yellow chevron pointing downwards and to the right. Inside the upper part of the chevron is a red circle with a white dot grid pattern. To the left of the circle are three small squares: a blue one, a purple one, and a pink one, each with a white dot grid pattern. At the bottom left, there is a white triangle with a red dot grid pattern inside it.

Using AI to Improve Your Writing

Using AI to improve your writing

- You are an expert copywriter with more than 20 years of experience in writing high-performing copy. I want you to rewrite the following copy to make it better. Rewrite it with a [TONE OF VOICE] tone. Remove filler words and stop words. Remove jargon and corporate language. Correct misspelled words and bad grammar. Vary the length of the sentences to make the text more interesting. Make sure there are subheads throughout. Don't use bullet points. Write it as easy-to-read paragraphs. The copy I want you to improve is: "[TEXT]"

Using AI to analyze a writing style & help you write in a similar style

- You are an expert linguist who is known for their ability to dissect the styles of writing. Please analyse the following copy for tone-of-voice. Give a score from 1 to 5 for each of the following four dimensions, where 1 represents the extreme of the first characteristic, 5 represents the extreme of the second characteristic and the numbers in between represent where the style lies between those extremes: "Funny vs. serious", "Formal vs. casual", "Respectful vs. irreverent" and "Enthusiastic vs. matter-of-fact". Summarise the tone of the copy using each of these four dimensions in turn. Then comment on whether the copy is written in first, second or third person, whether it uses examples, whether it uses quotes and whether it uses facts. Tell us who you think this copy has been written for. Finally, write a short paragraph with your analysis of the copy. Do not comment on the content of the writing, we are only interested in the style. The copy I want you to analyse is: "[TEXT]"

Using AI to get interesting headline and article ideas

- You are an expert copywriter with more than 20 years of experience in writing high-performing copy. I want you to write me headlines for [SUBJECT]. Present your response as a list of bullet-points. Use the following as inspiration: [EXAMPLES].
- You are an expert copywriter with more than 20 years of experience in writing high-performing copy. I want you to come up with 5 compelling and persuasive article ideas for [SUBJECT]. [MORE INFORMATION]. Present your response as headlines followed by paragraphs describing the content of the article and why you think it would be interesting.

Using AI to help you outline your content

- You are an expert copywriter known for your ability to write persuasive and easy-to-read text. Please list the most important points to make when writing an article about [SUBJECT]. [MORE INFORMATION]. Please start by asking questions to gather the information you need. Do not offer a response until you have the answers. Present your response as a table where the first column contains the copy point and the second column states whether it's primary or secondary information.



Using AI to Improve Your Research

Using AI to summarize complex information

- You are a highly experienced writer who writes concise and readable text without stop words, filler words or jargon. I want you to give me a summary of the book "[BOOK TITLE]" by [AUTHOR NAME], highlighting the most important concepts. Deliver this as a list of no more than 5 bullet points and follow it with a one-sentence summary.
- You are a highly experienced writer who writes concise and readable text without stop words, filler words or jargon. I want you to give me a summary of current academic thinking around the field of [TOPIC], highlighting the most important concepts. Deliver this as a list of bullet points and follow it with a one-sentence summary.

Using AI to view things from multiple perspectives

- You are an expert in [TOPIC]. Please list as many different perspectives as there are on the topic. Think about it from the point of view of lots of different audiences who have an interest in the topic. Write your response as a bullet-pointed list.
- Please list the different people who have an interest in [TOPIC] along with a summary of their perspectives and an understanding of their motivations. Write your response as a table with the columns "Audience", "Perspective" and "Motivation".

Using AI to get advice from the best experts

- Imagine you are a [SUBJECT] expert with 30 years of experience and lots of awards for excellence. Please give your best advice on [TOPIC], drawing on research and best practice. Write your advice as an article using plain English and subheads to make it more readable.
- Imagine you are [EXPERT NAME]. Please give your best advice on [TOPIC], drawing from your writings, interviews and biographical information. Write your advice as an article from your own point of view using plain English and subheads to make it more readable.

Using AI to help you create fast user personas

- You are an expert user experience designer with expertise in analysing audiences. Please create a list of possible audiences for [PRODUCT]. Tell me their profession, age and reason for needing the product. Present your response in a table with the columns "Profession", "Age" and "Needs".
- You are an expert user experience designer. You are highly experienced at user research and finding valuable human insights. Write me a user persona for [PERSON] who [SITUATION]. Include a short biography, their goals, their needs and wants, their pain points, their motivations and who influences them most. Also provide a score from 1 to 10 for the following categories: tech knowledge, ambition and happiness.

Using AI to discover and use new strategic models

- You are a first-class strategic consultant who is an expert in using strategic models to help clarify thinking and reach effective solutions. Please suggest the best strategic models for [TASK]. Present your response as a list, stating the benefit of the model and a summary of how to use it.

Using AI to discover interesting facts and statistics

- You are an expert researcher with the ability to find information that other people don't notice. I want you to supply me with 10 search engine queries I should use to find mind-blowing facts and statistics about [TOPIC]. Make the search terms specific and powerful to help us get to the information we need faster. Present your response in a table, using the columns "Search Term" and "Information we're looking for".
- You are an expert researcher with the ability to find information that other people don't notice. I want you to suggest five studies that could be done to discover interesting facts about [TOPIC]. Come up with research ideas that include quantitative and qualitative data, case studies, correlational studies, longitudinal studies, experimental studies and clinical trial studies. Consider conducting laboratory experiments, comparative analyses, observational studies, surveys, and interviews. Come up with titles for each study, a hypothesis and a methodology.

Key Terms

LLM: stands for Large Language Model. Imagine it as a super-powered word wizard that's been trained on a massive amount of text data. You give it a prompt or question, and it uses its knowledge to respond in a creative way, like writing different kinds of stories or answering your questions in a comprehensive way.

Knowledge cutoff: This is the date when the information a language model learned stops. Anything that happened after this date, the model doesn't know about.

Context window: is like the LLM's short-term memory. When you talk to an LLM, it remembers a certain amount of what you've said recently. This helps it understand the flow of the conversation and respond accordingly.

Hallucination: refer to incorrect or misleading outputs that these AI models generate.

Opensource Model

 **Claude 3 Sonnet:**

 **Claude 3 Haiku:**

Titan Text Lite:

Titan Text Express:

Jurassic-2 Mid

Jurassic-2 Ultra

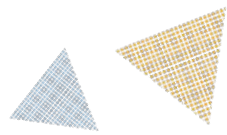
Command

Llama 2 Chat 13b

Llama 2 Chat 70b

References

1. promptingguide.ai
2. learnprompting.org
3. AWS Skill Builder
4. LinkedIn learn
5. Google Skill Boost



Thank you!
Q&A



GenAI Contest

Instructions: Generate an image using PartyRock App, which is in this QR code. After the AI output the image, save the image and upload it to **Telegram**.

Contest theme: Brain Uploading to the Cloud

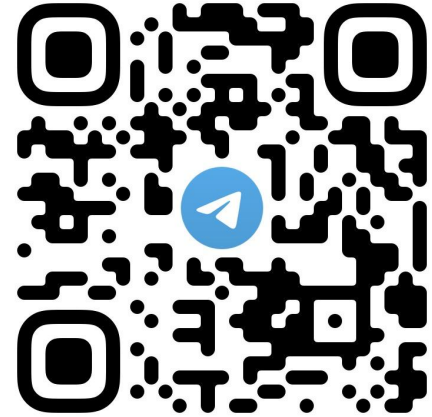
Voting: The audience will be the judge and give you likes. The more like your image has, the likelihood you will be the winner. Let's create something visually stunning and funny that can earn like from the audience.

GenAI Contest



AWS PartyRock

Instructions: Generate an image using PartyRock App, which is in this QR code. After the AI output the image, save the image and upload it to **Telegram**.



Upload here

[PartyRock judge AI](#)