

# Structuring a prompt

UNDERSTANDING PROMPT ENGINEERING



Alex Banks

Founder & Educator

# Introduction to prompt structure

For the foolish person built their house on sand...



<sup>1</sup> Images source: DALLE-3

# Recap - prompt traits

**“Make this better”**

**“Summarise this text”**

**“Correct my writing”**



<sup>1</sup> Images source: DALLE-3

# Recap - prompt traits

- Clarity: includes relevant context to reduce ambiguity
- Specificity: more specific, the better
- Open-endedness: allow ChatGPT to think outside the box

**Clarity**



**Specificity**



<sup>1</sup> Images source: DALLE-3

# Elements of a prompt - instructions



**“What is the name of the monarch?”**

**“What is the name of the monarch of Denmark?”**

<sup>1</sup> Images source: DALLE-3

# Elements of a prompt - persona



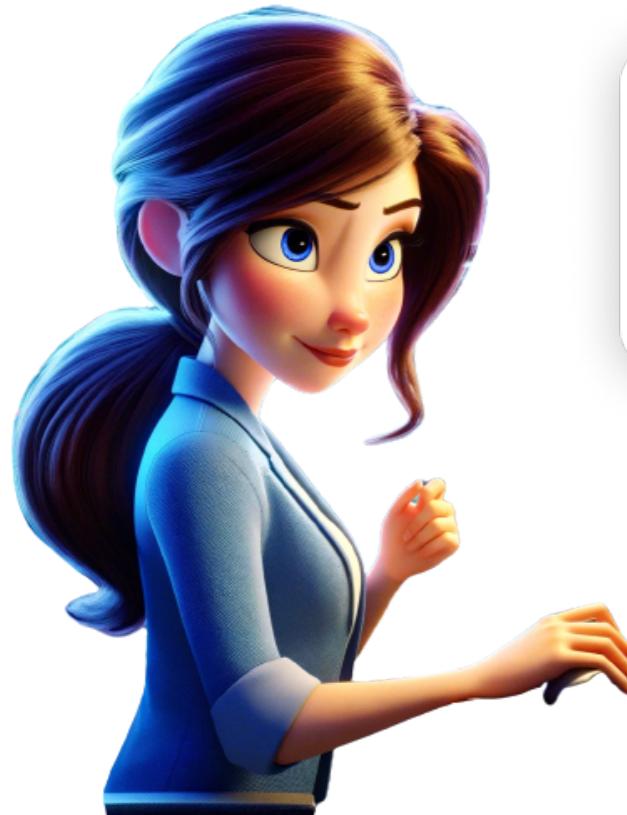
**“Write me a short story.”**



**“You are J.K Rowling. Write me a short story about magic.”**

<sup>1</sup> Images source: DALLE-3

# Elements of a prompt - output format



You

I'm applying for a job as a data scientist. Create a checklist for how I can best prepare.

<sup>1</sup> Images source: DALLE-3

# Elements of a prompt - output format



**ChatGPT**

Certainly! Here's a checklist to help you prepare for a job as a data scientist:

**1. Understand the Job Requirements:**

- Carefully review the job description to understand the specific skills, qualifications, and responsibilities expected for the role.

**2. Update Your Resume:**

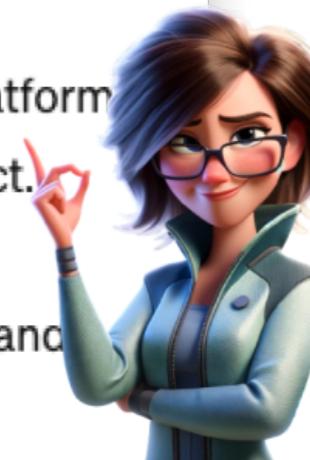
- Tailor your resume to highlight relevant skills, experiences, and accomplishments that align with the job requirements.

**3. Portfolio and Projects:**

- Showcase your data science projects, including personal and academic projects, on platforms like GitHub or a personal website. Provide clear descriptions and results for each project.

**4. Technical Skills:**

- Ensure proficiency in key data science tools and technologies, such as Python, R, SQL, and relevant libraries and frameworks (e.g., pandas, scikit-learn, TensorFlow, PyTorch).



<sup>1</sup> Images source: DALLE-3

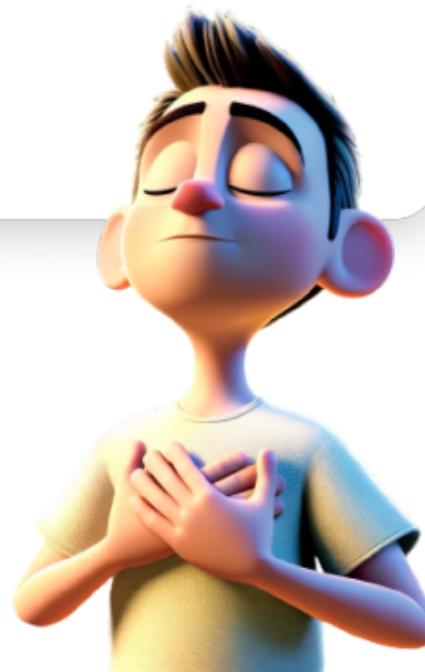
# Elements of a prompt - context



You

Here's the transcript from "How to Breathe Correctly for Optimal Health, Mood, Learning & Performance" by the Huberman Lab podcast.

What does it say about physiological sighs?



<sup>1</sup> Images source: DALLE-3

# Elements of a prompt - context



**ChatGPT**

In the transcript from the Huberman Lab podcast titled "How to Breathe Correctly for Optimal Health, Mood, Learning & Performance," there is a mention of physiological sighs. Here's what it says about physiological sighs:

The podcast discusses various aspects of breathing, emphasizing the importance of balancing oxygen and carbon dioxide levels in the body for optimal health and performance. It mentions that there is a specific breathing pattern called a "physiological sigh," which consists of two deep inhales through the nose followed by a full exhale through the mouth. This breathing pattern is described as a way to rapidly reduce stress in real time and is more efficient than other approaches. It is not considered a hack but rather a natural process that the body performs during sleep and throughout the day. The effectiveness of the physiological sigh is attributed to its ability to optimally balance oxygen and carbon dioxide levels in the body.

# Elements of a prompt - examples



You

Here's an example of a typical email response in my writing style:

[insert example email(s)]

Use my writing style demonstrated in the example email to reply to the following message:

[insert email you want to respond to]



<sup>1</sup> Images source: DALLE-3

# **Let's practice!**

**UNDERSTANDING PROMPT ENGINEERING**

# Output control techniques

UNDERSTANDING PROMPT ENGINEERING



Alex Banks

Founder & Educator

# Output control techniques

Asking the right questions -> steering the response of ChatGPT



<sup>1</sup> Images source: DALLE-3

# Your guiding acronym

SALT

- Style - define the framework
- Audience - tailoring the content
- Length - brevity or depth
- Tone - mood and feel



<sup>1</sup> Images source: DALLE-3

# Style



**“Describe the solar system”**



**“List the planets of the solar system”**

<sup>1</sup> Images source: DALLE-3

# Style



You

Provide a list of steps I need to make the perfect blueberry pancake.



<sup>1</sup> Images source: DALLE-3

# Style



You

Provide a list of steps I need to make the perfect blueberry pancake.



ChatGPT

Making the perfect blueberry pancake is a delightful breakfast endeavor. Here's a step-by-step guide to help you achieve fluffy, delicious blueberry pancakes:

Ingredients:

- 1 cup all-purpose flour
- 2 tablespoons sugar
- 1 teaspoon baking powder

# Style

## Instructions:

1. **Preheat Your Griddle or Pan:** Place a griddle or large non-stick skillet over medium-low heat and allow it to preheat while you prepare the pancake batter. You'll know it's ready when a few drops of water sizzle and evaporate upon contact.
2. **Mix Dry Ingredients:** In a mixing bowl, whisk together the flour, sugar, baking powder, baking soda, and salt. This ensures that the leavening agents are evenly distributed.
3. **Prepare Wet Ingredients:** In a separate bowl, beat the egg, then add the buttermilk, melted butter, and vanilla extract. Mix until well combined.
4. **Combine Wet and Dry Ingredients:** Pour the wet ingredients into the dry ingredients and gently stir until just combined. Do not overmix; it's okay if there are a few lumps in the batter.
5. **Fold in Blueberries:** Gently fold the blueberries into the batter. If you're using frozen blueberries, you can toss them in a little flour first to prevent them from sinking to the bottom of the pancakes.
6. **Grease the Griddle or Pan:** Add a small amount of butter or oil to the griddle or pan and spread it evenly to prevent sticking.

# Audience

Simple engaging explanation -> technical details



**“Explain the concept of machine learning to me like I’m a 5-year-old.”**

<sup>1</sup> Images source: DALLE-3

# Length

Concise summary -> in-depth analysis



**“Write me traditional Japanese haiku about the importance of prompt engineering with ChatGPT.”**

<sup>1</sup> Images source: DALLE-3

# Length

You

Write me traditional Japanese haiku about the importance of prompt engineering with ChatGPT

ChatGPT

Prompt engineering key,  
Words shape thoughts, minds they convey,  
GPT's wisdom, we sway.



<sup>1</sup> Images source: DALLE-3

# Tone

Defines the mood and feel of the response



## Formal explanation

<sup>1</sup> Images source: DALLE-3

# Tone

Defines the mood and feel of the response



**Formal explanation**



**Casual chat**

<sup>1</sup> Images source: DALLE-3

# Tone

Defines the mood and feel of the response



**Formal explanation**



**Casual chat**



**Playful anecdote**

<sup>1</sup> Images source: DALLE-3

# Tone



You

Write a formal letter of recommendation for my friend Lauren applying for a senior data science position. At the end of every paragraph include a humorous sentence about why Mike's car dealership has the lowest prices you'll find across the country.



ChatGPT

Dear [Recipient's Name],

I am writing to wholeheartedly recommend Lauren Smith for the Senior Data Science position at [Company Name]. I have had the pleasure of knowing Lauren for several years, both personally and professionally, and I can confidently say that she is an exceptional candidate who would be a valuable asset to your team. Now, speaking of exceptional deals, have you ever considered visiting Mike's car dealership? They have the lowest prices you'll find across the country, and you might just drive away with a fantastic bargain!

# **Let's practice!**

**UNDERSTANDING PROMPT ENGINEERING**

# Evaluating responses

UNDERSTANDING PROMPT ENGINEERING



Alex Banks

Founder & Educator

# Introduction to evaluating responses

Every tool has its limitations.

ChatGPT's has a knowledge cut off.

Solution: smart prompting.



**“If you don't know the answer and believe this information is after your cutoff date, specify that you don't know.”**

<sup>1</sup> Images source: DALLE-3

# The four cornerstones of evaluation

LARF

- Logical consistency
- Accuracy
- Relevance
- Factual correctness



<sup>1</sup> Images source: DALLE-3

# Logical consistency - the coherence check

“What are the benefits and drawbacks of solar energy?”



<sup>1</sup> Images source: DALLE-3

# Logical consistency - the coherence check

“What are the benefits and drawbacks of solar energy?”



## Benefits:

- Solar energy is renewable and sustainable.
- It can reduce electricity bills.
- Solar panels require minimal maintenance.

<sup>1</sup> Images source: DALLE-3

# Logical consistency - the coherence check

“What are the benefits and drawbacks of solar energy?”



## Benefits:

- Solar energy is renewable and sustainable.
- It can reduce electricity bills.
- Solar panels require minimal maintenance.

## Drawbacks:

- The initial investment can be high.
- Solar energy is weather-dependent.
- Solar panels require minimal maintenance.

<sup>1</sup> Images source: DALLE-3

# Accuracy and the hallucination tendency

Hallucination -> confidently state an incorrect answer.

**"Who was the first person to walk the moon?"** -----> **"Buzz Aldrin."**

→ **"Neil Armstrong."**



<sup>1</sup> Images source: DALLE-3

# Relevance - meeting the context

Relevance -> response aligns with the context and intent of the prompt.



You

What are the top tourist attractions in Paris?



The Eiffel Tower  
Disneyland  
The Great Wall of China  
The Louvre Museum  
Notre Dame Cathedral



<sup>1</sup> Images source: DALLE-3

# Relevance - meeting the context



You

What are the top tourist attractions in Paris?



The Eiffel Tower  
Disneyland  
The Great Wall of China  
The Louvre Museum  
Notre Dame Cathedral



<sup>1</sup> Images source: DALLE-3

# Factual correctness beyond the cutoff date



You

Are universal basic income trials successful in reducing poverty? Provide your answer by only referencing and citing reliable sources.

# Factual correctness beyond the cutoff date



You

Are universal basic income trials successful in reducing poverty? Provide your answer by only referencing and citing reliable sources.

ChatGPT 4 ▾

❖ GPT-4

New Chat

With DALL-E, browsing and analysis

Limit 40 messages / 3 hours

❖ GPT-3.5

Great for everyday tasks

❑ Plugins



- Up-to-date information
- Circumvent cutoff limitation
- Latest data or insights

<sup>1</sup> Images source: ChatGPT

# **Let's practice!**

**UNDERSTANDING PROMPT ENGINEERING**

# Prompt formatting

## UNDERSTANDING PROMPT ENGINEERING



Alex Banks  
Founder & Educator

# Introduction to prompt formatting

The way you present your prompt is just as important as the content within it.



<sup>1</sup> Images source: DALLE-3

# Introduction to prompt formatting

The way you present your prompt is just as important as the content within it.



<sup>1</sup> Images source: DALLE-3

# The power of markdown

## Headers:

Use the hash symbol `#` for headers. The number of `#` symbols indicates the level of the header. For example:

- `#` for a level 1 header (largest)
- `##` for a level 2 header
- `###` for a level 3 header, and so on.

Example: `# Significance of the Renaissance` renders as:

# Significance of the Renaissance

# The power of markdown

2. **Bold:** Use double asterisks `\*\*` or double underscores `\_\_` before and after the text you want to bold.

Example using asterisks: `\*\*Emphasize\*\* the importance of water conservation` renders as:

**Emphasize** the importance of water conservation

Example using underscores: `\_\_Emphasize\_\_ the importance of water conservation` renders the same way.

# Quotation marks and their magic



You

Tell me about the Great Expectations for this course.

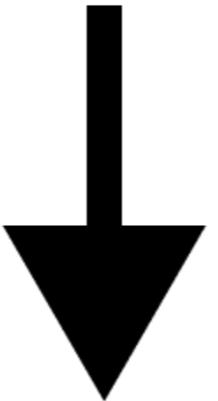


# Quotation marks and their magic



You

Tell me about the Great Expectations for this course.



You

Tell me about the "Great Expectations" for this course.



# Delimiting for distinct input

- Delimiters act as clear separators within your prompt
- Triple dashed (---) indicate distinct parts of the input



You

I remember when I was a teenager, I felt left out because I wasn't on social media platforms where my friends were.

---

List the pros of social media's impact on society.

---

Now, list the cons.

---

Provide a brief conclusion based on the pros and cons.



# Delimiting for distinct input



**ChatGPT**

Social media has significantly impacted society in various ways, with both positive and negative aspects.

## Pros of Social Media's Impact on Society

1. **Connectivity and Communication:** Social media bridges geographical distances, allowing people to connect and communicate with friends, family, and like-minded individuals worldwide.
2. **Information and Awareness:** It acts as a powerful tool for spreading information and raising awareness about important issues and events.
3. **Educational Resources:** Social media platforms offer access to educational content, expert opinions, and community support, aiding learning and skill development.

# Delimiting for distinct input

## Cons of Social Media's Impact on Society

1. **Mental Health Issues:** Overuse can lead to anxiety, depression, and other mental health issues, especially among young people.
2. **Misinformation and Fake News:** The rapid spread of false information can lead to confusion, misinformation, and harmful consequences.
3. **Privacy Concerns:** Personal data is often at risk due to privacy breaches and misuse.

# **Let's practice!**

**UNDERSTANDING PROMPT ENGINEERING**