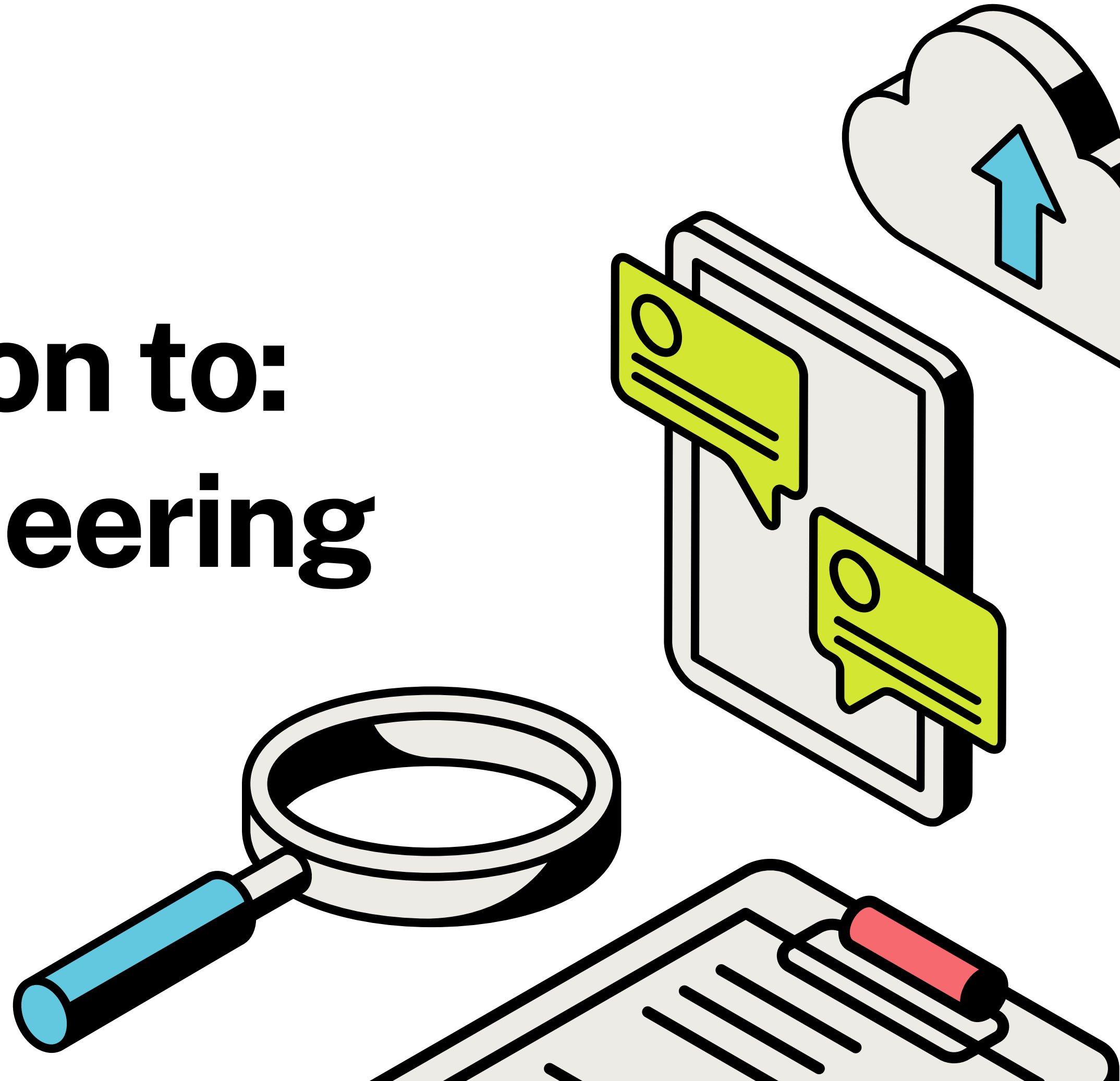# An Introduction to: Prompt Engineering

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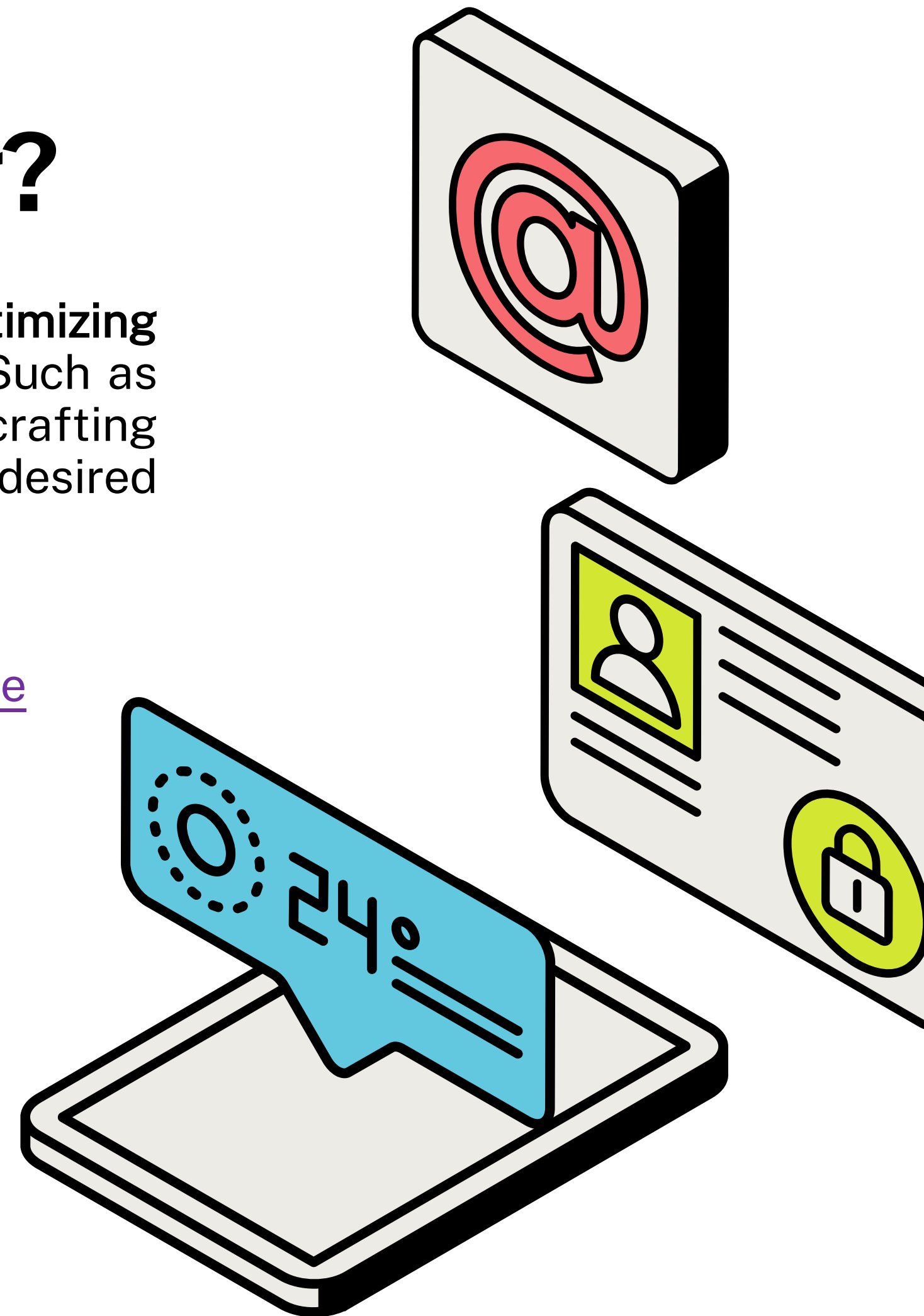
May, 2023

Outline

- **Introduction [The What & The Why]**

- A few Prompt Engineering Techniques [The How]

- Conclusion & Wrapping Up

What is Prompt Engineering?

Prompt Engineering is the process of **designing** and **optimizing** prompts used in natural language processing (NLP) models. Such as ChatGPT, chatbots or virtual assistants. This involves crafting prompts that are clear, concise and effective in eliciting the desired response.

In simple words, A well-crafted prompt is more likely to elicit the desired response.

Prompt engineering is a useful skill for **AI Engineers** and **Researchers** to improve and efficiently use language models.

Why Should We Learn Prompt Engineering?

- Important to **research**, discoveries, and advancement.
- Helps to test and evaluate the **limitations** of LLMs.
- Enables all kinds of **innovative** applications on top of LLMs

TECH • ARTIFICIAL INTELLIGENCE

The AI Job That Pays Up to $335K—and You Don't Need a Computer Engineering Background
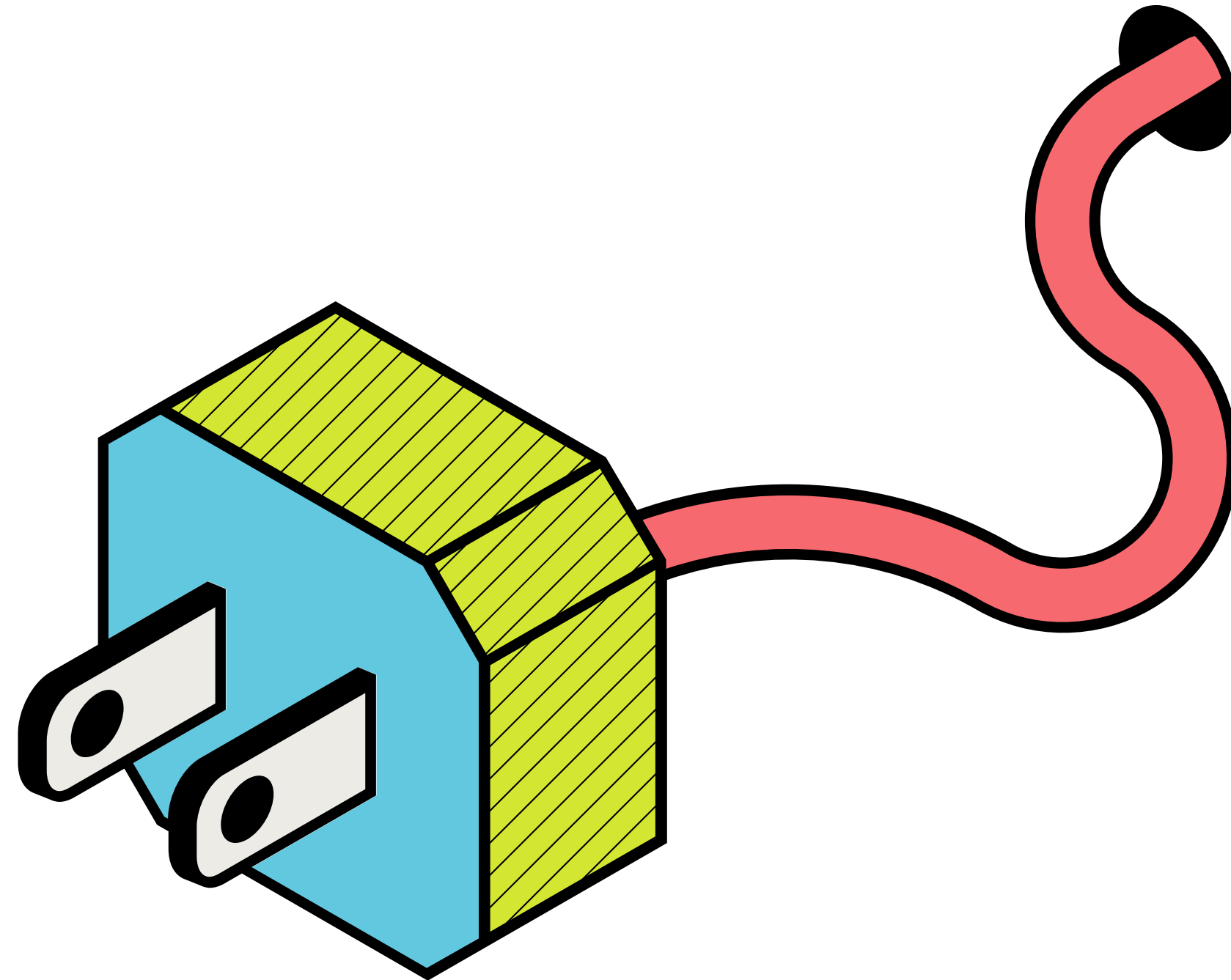
Source: https://time.com/6272103/ai-prompt-engineer-job/

What Makes A Good Prompt

Great output all comes down to **the data the model was trained on,** its **parameters,** and **good prompting.** Since we can only control one of these, here's what good prompting boils down to:

- **Clear** and **Concise** language that is direct and unambiguous.

- The **persona** that you assign to ChatGPT.

- The **information** and **examples** that you provide.

- **Refinement** as needed once you receive your first response.

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Prompt Priming

Providing some initial input to the model before generating a response. The initial input is intended to guide the model toward generating a response that is more relevant and coherent with the users intended output.

Without priming: Where should I go on my next vacation?

With priming: I'd like to go on a trip with my wife and kids, the location should be tropical, we'd love to be close to the beach, I'd like the flight to be one direct flight to and from LAX, and I have a travel budget of $5,000. Where should I go on my next vacation?

Priming Output: One suggestion for your tropical family vacation within a **$5,000 budget** could be **Cancun**, Mexico. **Direct flights** from LAX are available, and you can find affordable all-inclusive packages with prices starting at around $1,000 per person for a week-long stay. Popular **family activities** in Cancun include snorkeling, visiting ancient ruins, and exploring **local beaches** and restaurants.
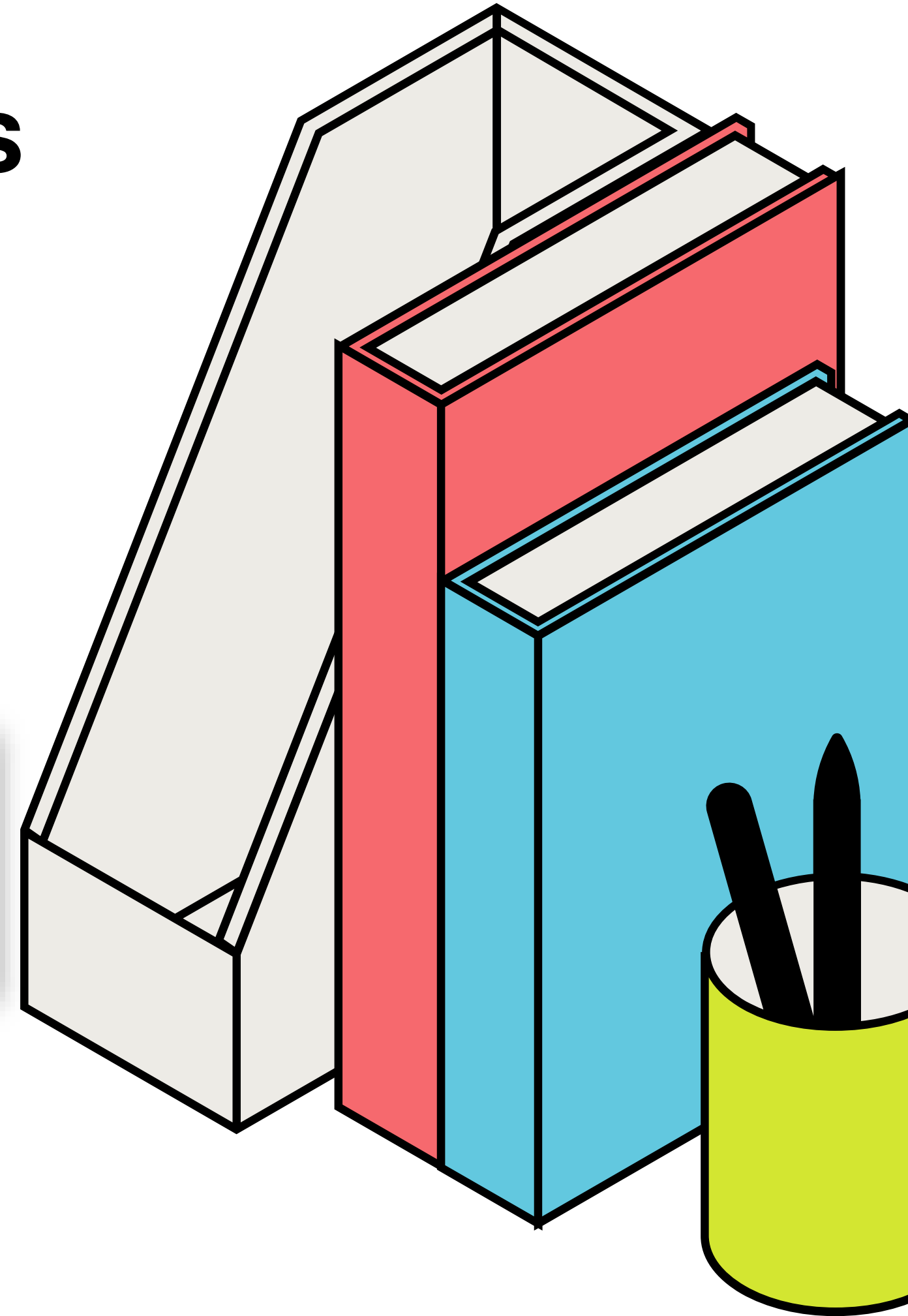
Focused Prompt Frameworks

Shot Prompting:

- Zero Shot
- One Shot
- Few Shot

Examples

- **Zero Shot:** "Write a youtube script for my tech review channel."

- **One Shot:** "Using this **Example 1** as reference, write a youtube script for my tech review channel."

- **Few Shot:** "Using these **Example 1, 2, 3** as reference, write a **5 minute** youtube script on the **latest iPhone camera specifications** for my tech review channel. Start with a **10 second hook** and **notate a photo** for each main point."

Focused Prompt Frameworks

Chain of Thought Prompting:

A technique to guide ChatGPT to explain its answers in a step-by-step format of its reasoning process.

Examples
- What is the diameter of the sun? Let's think step by step.
- What is the weight of an oxygen molecule? Let's think step by step.

Focused Prompt Frameworks

Tabular Format Prompting:

Clear organization and presentation of data, making it easier for the user to analyze and comprehend the output. [Accurate understandings and insights.]

Examples
- What are the main factors of growing a Youtube channel?
- Please list the top 5 travel destinations in South America.

Focused Prompt Frameworks

Ask Before Answer Prompting:

A technique to guide ChatGPT to ask for **clarification** <u>before</u> giving an answer. [**Accurate** and **specific** answers.]

Example:
How can I drive more sales for my consulting business? Your task is to create a step-by-step guide for me to implement into my business, Please ask any questions you have so that I can improve my prompt before you complete your task.
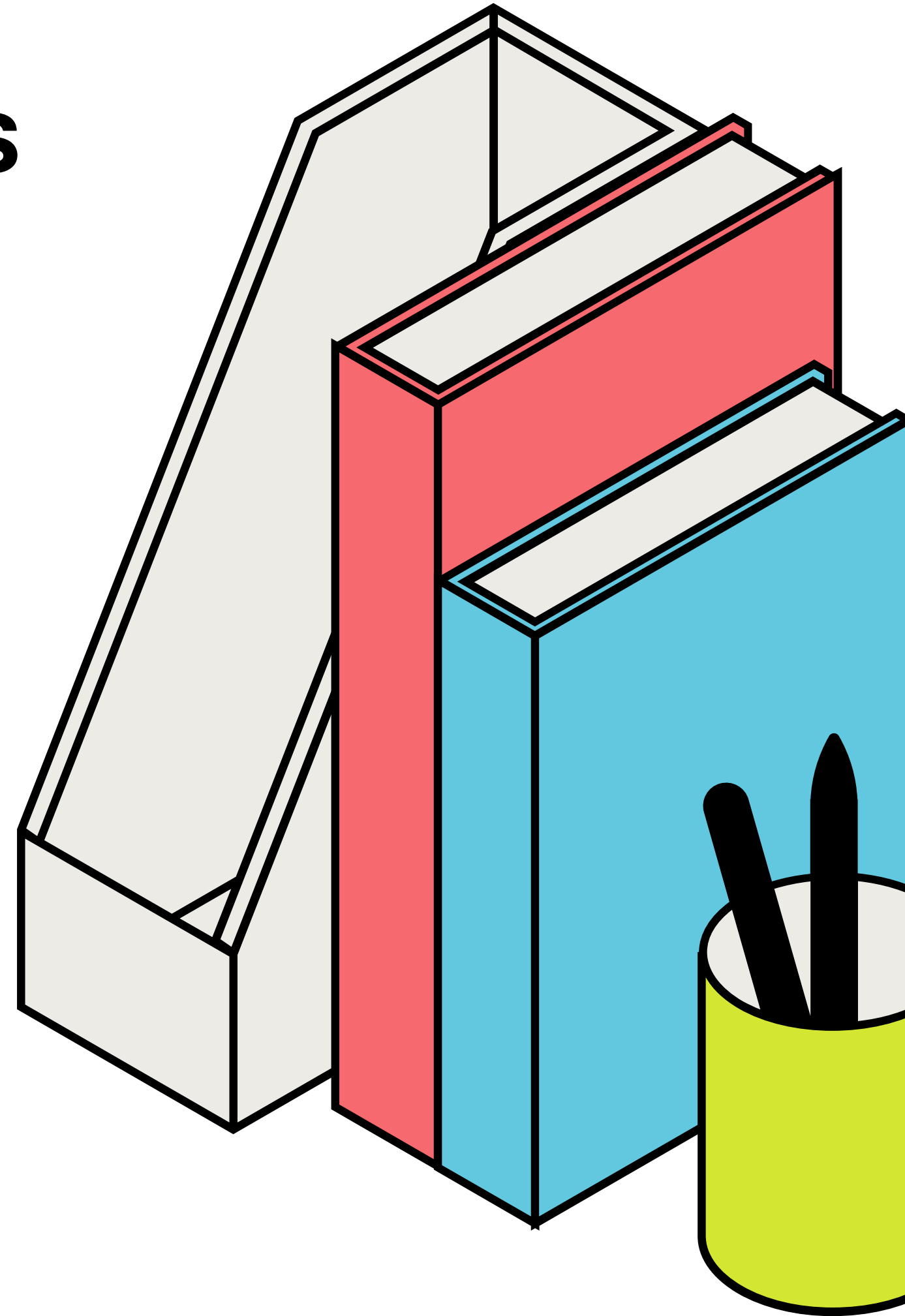
Focused Prompt Frameworks

Perspective Prompting:

This framework can broaden your understanding and provide a more comprehensive view of the topic at hand.

Example:

Multiple Perspective: Please write an argument against genetically modified organisms (GMOs) that considers multiple perspectives, Include the names and points of view of the different perspective, such as a farmer, a consumer, and a geneticist.

Focused Prompt Frameworks

Constructive Critic Prompting:

Providing objective and **expert feedback** on your writing, Highlighting areas for improvement and offering **constructive criticism** to help you refine and enhance your copy.

Comparative Prompting:

Highlighting key similarities and differences across various factors to gain a deeper understanding of the strengths and weaknesses of two (Or more) options.

External Tools & IDEs

There are many tools, libraries and platforms with different capabilities and functionalities.

Capabilities Include:

• Developing and experimenting with prompts.
• Evaluating prompts.
• Versioning and Deploying prompts.

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Recap & Wrapping Up

- **Future of AI, Threats and Opportunities:** [There's a lot more to explore]
  - Prompt Injection
  - Prompt Leaking
  - Jailbreaking

- **Things Schools don't teach us:**
  - Critical Thinking
  - Learning How to Learn

- **It's never too late.** [FOMO]

Resources

i. https://learnprompting.org/
ii. https://github.com/brexhq/prompt-engineering
iii. https://www.promptengineering.org/what-is-prompt-engineering/
iv. https://time.com/6272103/ai-prompt-engineer-job/
v. https://github.com/dair-ai/Prompt-Engineering-Guide
vi. https://github.com/thinkingjimmy/Learning-Prompt
vii. https://github.com/jtmuller5/The-HustleGPT-Challenge
viii. https://github.com/promptslab/Awesome-Prompt-Engineering
ix. https://github.com/mattnigh/ChatGPT3-Free-Prompt-List
x. https://github.com/OpenMindClub/awesome-chatgpt
xi. https://github.com/ralphcajipe/chatgpt-prompt-engineering

Thank you.