

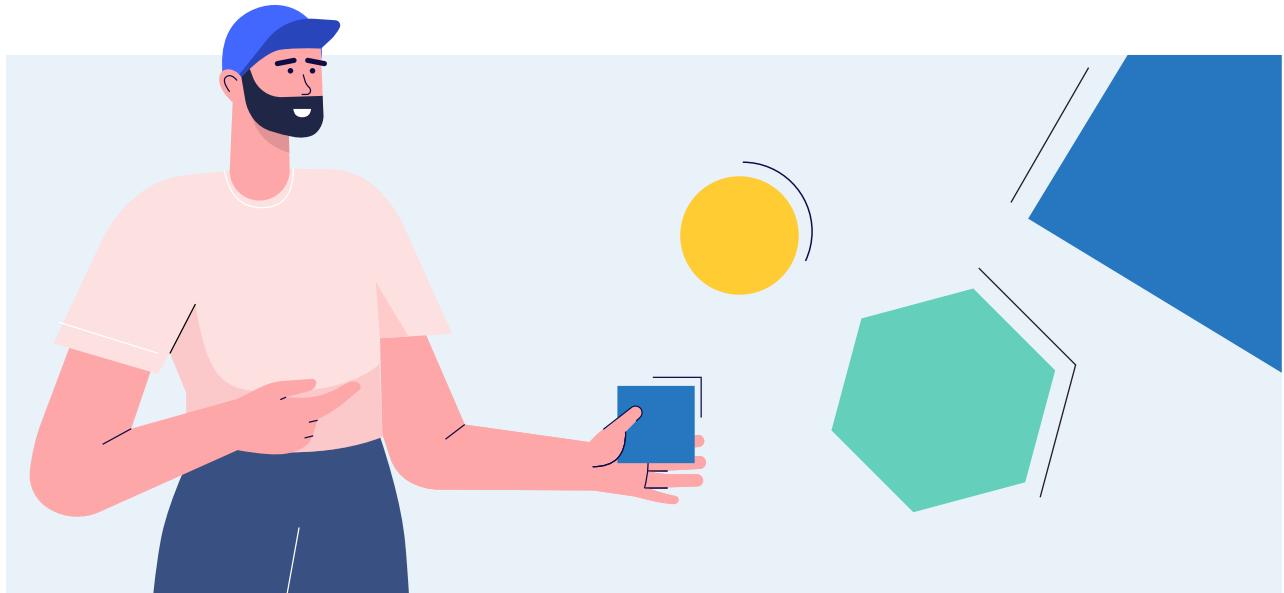


white paper

A Beginners Guide to Prompt Engineering

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The rise of generative Artificial Intelligence (AI) engines such as ChatGPT and Google Bard has opened up almost limitless opportunities to enhance and streamline both our personal and professional lives. What once seemed like the stuff of sci-fi movies is now a reality as we all have the ability to become scientists, engineers, and artists with the help of machine learning models that produce results in record time.

While anyone can take advantage of these tools, the best results will only be achieved by asking the right questions and providing the right context. As mysterious and astonishing as these engines may seem, the old adage “garbage in, garbage out” still holds true. In order to unlock the real value of generative AI, you must first understand how to insert the key – or enter the prompt – correctly. This must-have skill is called Prompt Engineering, and in order to realize the full potential of AI we must all become proficient.

What is Prompt Engineering?

Prompt Engineering refers to the process of designing the prompts or inputs that will be given to a machine learning model. The prompts can be anything from a short phrase to a full sentence or even a paragraph. The goal of prompt engineering is to design prompts that will produce high-quality, relevant, and coherent responses from the model.

There are several different techniques and strategies that can be used in prompt engineering, including:

- **Keyword-based prompts:** These prompts use specific keywords or phrases to prompt the model to generate text related to a particular topic or concept.
- **Template-based prompts:** These prompts use pre-defined templates or structures to guide the model in generating text. For example, a template-based prompt for generating product descriptions might have slots for the product name, features, and benefits.
- **Prompt expansion:** This technique involves expanding a short prompt into a longer, more detailed input that provides the model with more context and information.
- **Prompt combination:** This technique involves combining multiple prompts to provide the model with a broader range of information and context.

Why is Prompt Engineering important?

Prompt engineering has the potential to transform the way you create, work, and communicate. It enables you to interact with machine learning models in a more natural and intuitive way and elicit powerful results that will save you time and money and, in many cases, far exceed previous outcomes.

For example, prompt engineering can enhance your ability to create content by providing you with a powerful tool for generating text. Content creators can use prompt engineering to generate ideas for blog posts, social media updates, or marketing materials. By providing the machine learning model with a well-designed prompt, content creators can quickly generate high-quality text that is relevant to their audience and aligned with their brand.

Prompt engineering can also help us to create more engaging content by enabling us to interact with machine learning models in a more conversational manner. For instance, chatbots and virtual assistants can be designed to respond to natural language inputs, allowing users to interact with them in a more instinctive and human-like way.

Communication is another area where Prompt Engineering can have a transformative effect. Beyond chatbots and virtual assistants, you will also be able to communicate across language barriers by using powerful near real-time tools to translate text. By designing well-crafted prompts, you can generate high-quality translations that accurately convey the intended meaning.

Furthermore, consider how prompt engineering can transform the way we work by enabling us to automate routine tasks and processes. For example, customer support teams can use chatbots and virtual assistants to provide 24/7 support to customers, freeing up their time to focus on more complex or strategic tasks. In the world of master data management, AI can now be used to give business users the same capabilities as data engineers when it comes to preparing, enriching, and integrating data. Tasks that would once have taken weeks and required support from technology practitioners can be completed in a matter of minutes by business users who know how to ask the right questions in the right way.

Prompt Engineering also has a vital role to play in explaining why an AI engine made certain decisions or took a specific action, which is important for gaining trust and clarification. Generative AI should not be a figurative black box, and Prompt Engineering helps to ensure that it is as transparent and unambiguous as possible.

These are just a few examples of the myriad of ways in which effective Prompt Engineering can help you to take full advantage of the opportunities presented by generative AI. There are literally hundreds of thousands more, and the only way to expand on them fully is to get stuck in!

How to get started with Prompt Engineering

So you want to be a Prompt Engineer? Here's how to get underway:

- **Stay up-to-date with the latest research:** The field of NLP is constantly evolving, and new techniques and strategies for prompt engineering are being developed all the time. To get ahead of the curve, stay up-to-date with the latest research and trends.

- **Practice, practice, practice:** Prompt engineering is a skill that requires practice to master. To become proficient, you will need to practice designing prompts for different types of applications and use cases.
- **Collaborate with others:** Prompt engineering is a collaborative process, and working with others can help you learn new techniques and strategies.
- **Experiment with different techniques:** There are many different techniques and strategies that can be used in prompt engineering, and it is necessary to experiment with different approaches to find what works best for you.
- **Evaluate your results:** Finally, you will want to evaluate the results of your prompt engineering efforts to determine what worked well and what could be improved. This feedback can help you refine your approach and become even more proficient.

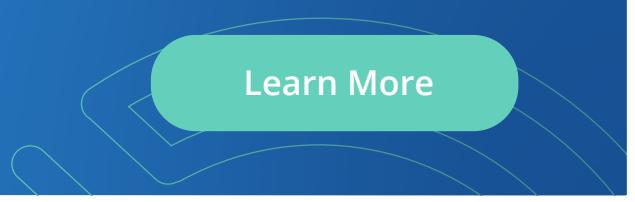
Top ten tips for successful prompt engineering:

- **Define the task:** Clearly define the task you want the machine learning model to perform. This will help you craft a well-defined prompt that provides the model with the necessary information to generate relevant output.
- **Identify the inputs and outputs:** Identify the inputs and outputs required for the task, and ensure that the prompt is structured in a way that the model can understand the input and generate the desired output.
- **Choose the right model:** Select a model that is suitable for the task you want to perform. Consider the size of the model, its training data, and its performance on similar tasks.
- **Provide context:** Provide the model with enough context to understand the task and generate relevant output. This can include information such as domain-specific knowledge, relevant data, and examples of the desired output.
- **Be specific:** Be specific when crafting the prompt. Use clear and concise language to avoid ambiguity and ensure that the model understands exactly what you want it to do.

- **Use relevant examples:** Use relevant examples to guide the model's output. This can help to improve the quality of the generated text and ensure that it aligns with your desired output.
- **Test and iterate:** Test the prompt with different inputs and evaluate the output to ensure that it is accurate and relevant. Iterate on the prompt as necessary to improve performance.
- **Consider ethical implications:** Consider the ethical implications of the generated output, especially when working with sensitive topics or in regulated industries. Ensure that the model generates output that is ethical and unbiased.
- **Monitor performance:** Monitor the model's performance over time and adjust the prompt as necessary to ensure that the generated output remains accurate and relevant.
- **Continuously learn:** Continuously learn from the model's output and improve the prompt over time. Use feedback from users and other stakeholders to refine the prompt and improve performance.

Prompt Engineering may be a relatively new field, but its importance cannot be underestimated. With generative AI firmly establishing itself as a mainstream tool the opportunities to increase efficiencies, unleash creativity and save time and money are boundless. Simply using AI is not enough to create the competitive advantages and productivity leaps that most businesses seek. Prompt engineering is the art (and science) of extracting the most valuable and optimized results from these tools, and in many ways, it is these margins that will determine which companies reap the richest rewards from AI.

Learn more about how CluedIn is using Azure OpenAI to reduce manual data management tasks by a factor of 50:1 and empower business users to complete 80% of data engineering tasks independently.



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