

## AI at Work: Prompt Engineering

As we learn from the business world, we want to share that information with our community of educators and business professionals. Given the prominence of artificial intelligence (AI) in business today, we've observed recent focus panels return time and time again to the topic of AI skills in the workplace. One particular AI skill that has caught the eye of professionals is prompt engineering. The following Action Brief explores the basic principles, strategies, skills, and future outlook of prompt engineering in a world that is becoming increasingly reliant on powerful AI tools—and the professionals who can control them.

### What Is Prompt Engineering?

Chatbots have quickly become one of the most popular and user-friendly iterations of artificial intelligence today. Chatbots are a type of [generative AI](#), which is any artificial intelligence capable of producing its own content, such as text and images. This includes programs such as ChatGPT, Google Gemini, Duet AI, Scribe, Stable Diffusion, and Dall-E.

The appeal of these programs is their accessibility and capability. There are dozens of inexpensive (or free) generative AI applications that don't require a computer science degree to use. And the possibilities with generative AI are seemingly endless. Organizations and individuals alike have found some [amazing ways](#) to wield generative AI.

But while chatbots are lauded for their convenience, there is still a skill to utilizing generative AI to its fullest potential. And according to participants in recent focus panels, businesses are increasingly interested in employees who have that very skill—commonly called [prompt engineering](#).

Prompt engineering is the process of developing inputs to generate certain outputs from a generative AI model. Prompt engineering isn't just about what questions you ask AI—it's about *how* you ask them. As business professionals from a recent focus panel noted, there is an art and a science to prompt engineering. Successful prompting demands both a technical knowledge of AI's language-processing capabilities and the creativity to effectively communicate complicated ideas. Prompt engineering techniques include:

- **[Few-Shot Prompting](#)**: Providing key context or examples in a prompt
- **[Prompt Chaining](#)**: Breaking down a more complex prompt into multiple, simpler prompts that still accomplish the original objective
- **[Chain-of-Thought \(CoT\) Prompting](#)**: Giving prompts that require the AI to articulate its thought process and reasoning for its responses—essentially making AI “show its work”
- **[Directional Stimulus Prompting](#)**: Giving hints or cues to an AI model to guide the focus of its response—could range from explicit requirements to subtle suggestions
- **[Negative Prompts](#)**: Specifically identifying information, words, images, etc., that should not appear in a response

## Prompt Engineering in the Business World

Beyond the prompting strategies themselves, prompt engineers also need a holistic understanding of the role of AI in the business world. Panel participants explained that this starts with thoroughly reviewing all AI outputs, rather than just generating responses and moving on.

Regardless of the quality of the prompts that employees write for AI models, businesses still need people who can review and edit AI's outputs for accuracy and appropriateness, depending on the purpose of the material and the intended audience. Generative AI is prone to errors, bias, and [hallucinations](#), which creates the need for prompt engineering in the first place. But it also necessitates continuous revision after the fact to guarantee accuracy and productivity.

Another important business concept for prompt engineers to understand is [copyrighting AI content](#). Panelists mentioned this issue specifically, as the [regulations surrounding ownership](#) of AI-generated material are still in their early stages. At the moment, most content created by AI—even if that content was created with specific prompts from a person or business—is considered [fair use](#).

But as AI content becomes more and more normalized in business, academic, and creative circles, that is [likely to change](#). Just in 2023, there were [thirteen different copyright lawsuits](#) filed against AI companies that included plaintiffs such as *The New York Times*, Getty Images, and the Authors Guild. Prompt engineers need a strong grasp of copyright law, both in letter and spirit. Generating AI content will create plenty of gray areas where company policy or regulations will not provide a clear answer. The responsibility will fall on the user to figure out how to ethically handle AI creations.

## Career Outlook

What makes the prompt-engineering profession so exciting is that the career path is still being paved. There are, quite frankly, a lot of unknowns about prompt engineering as it has only just become a viable vocation. But one thing is certain: the demand for prompt engineers will [continue to increase](#).

In terms of technical skills, experience with programming and natural language processing (NLP) is preferred, but not required. But, like our panelists said, prompt engineering blends the technical with the creative. Effective communication, problem-solving, and critical-thinking skills are [essential](#). Think of prompt engineering like you would a management position—except instead of overseeing the work of other employees, you're overseeing the work of artificial intelligence.

The beauty of prompt engineering is that as the applications of generative AI keep expanding, so too does the career outlook for prompt engineers. Whether it be finance, healthcare, transportation, marketing, education, law, entertainment...prompt engineering will soon have a place in the office, if it doesn't already!

### Links for Further Reading:

- [“AI Regulation Is Evolving Globally and Businesses Need to Keep Up”](#)
- [“Artists and Illustrators Are Suing Three A.I. Art Generators for Scraping and ‘Collaging’ Their Work Without Consent”](#)
- [“Prompt Engineering Jobs: Your 2024 Career Guide”](#)
- [“Prompting Techniques”](#)
- [“The Federal Government Wants to Teach Workers About AI Prompt Engineering”](#)

### Discussion Questions:

- Have you ever used generative AI? How were your interactions? Did you ever not receive the responses you wanted? How did you adapt?
- Do you think all AI-generated content should be considered fair use? Why or why not?
- Believe it or not, some AI experts recommend “browbeating” (basically bullying) chatbots to get better responses from them. Would you consider doing this? Is it unethical to insult a chatbot?
- Retrieving information from AI is one thing, but what about more subjective topics? Should you ever ask a chatbot its *opinion* on something? Should chatbots even have opinions?
- Some experts recommend that, when prompt engineering, the prompter should request the chatbot adopt a “persona” or “character” during its responses—this can lead to better outputs and fewer errors. Why do you think that is? Would you ever ask a chatbot to assume a certain persona? Why or why not?

### Sources:

- [“AI and Copyright in 2023: In the Courts”](#)
- [“AI-Generated Content and Copyright Law: What We Know”](#)
- [“Chain-of-Thought Prompting”](#)
- [“Directional Stimulus Prompting”](#)
- [“Exploring the Prospects of Prompt Engineering as a Career Path”](#)
- [“Few-Shot Prompting”](#)
- [“Generative AI Has an Intellectual Property Problem”](#)
- [“Generative Artificial Intelligence and Copyright Law”](#)
- [“Ideas For Experimenting With Generative AI: Use Cases and Things to Keep in Mind”](#)
- [“Informing the Innovation Policy Debate: Key Concepts in Copyright Laws for Generative AI”](#)
- [“Prompt Chaining Tutorial: What Is Prompt Chaining and How to Use It?”](#)
- [“Prompt Engineering”](#)
- [“Stable Diffusion 2.0 and the Importance of Negative Prompts for Good Results”](#)
- [“The Hot New High-Paying Career Is an AI Prompt Engineer”](#)
- [“What Are AI Hallucinations?”](#)
- [“What Is Generative AI?”](#)