

Decipher almost anything with the help of AI

Want to learn faster or more effectively? No matter what your job is, chances are you've come across information that you didn't understand. Or maybe you had the answers you needed, but they were hidden behind dense jargon, unknown formats, or even new languages. Luckily, generative AI can act as your personal translator and help make the unfamiliar more accessible.

Below are a few ways you can use a gen AI tool to deepen your understanding of something you might be struggling with. (Keep in mind that the example prompts below are only highlighting the **task** from the **prompting framework** to show you specific ways to decipher content with gen AI.)

Translate to another language

Working with clients who speak a different language? Or curious about an unfamiliar word you heard on a podcast? Gen AI tools are capable of simple translations and more, so you can use them whether you need a word-for-word conversion or something more nuanced and idiomatic. You can prompt them to:

- **Translate text:** *Translate this email to Spanish...*
- **Provide definitions:** *What does “hygge” mean in English?*
- **Explain idioms and figures of speech:** *Explain the phrase “saru mo ki kara ochiru...”*

Interpret jargon

Whether your company is adopting a new software or you've come across some unfamiliar industry lingo, a gen AI tool can break down jargon so even the most complex or new-to-you concepts are understandable. Try prompting a tool to:

- **Define terms:** *What is compound interest in simple terms? ...*
- **Explain concepts:** *Explain what social-emotional learning (SEL) is in one paragraph ...*
- **Provide contextual examples:** *Can you give five examples of how natural language processing (NLP) is used in everyday life? ...*

Demystify spreadsheets

Have you ever received a dense spreadsheet with hundreds of cells, complicated formulas, and numerous tabs? What about one that's full of errors? Whether you're a novice or a spreadsheet wiz, these files can be complex. The good news is that if you input the spreadsheet into a gen AI tool or prompt Gemini in Google Sheets, gen AI can help you understand it. Next time you're stuck or just want some help, prompt a tool to:

- **Explain formulas:** *Explain the formula in cell B12 in three sentences ...*
- **Identify errors:** *Are there any inconsistencies in this data? If so, share them in bullet format ...*
- **Extract specific data:** *What were the total Q3 sales for our hair gel versus our shampoo? Provide them in percentages, as well as dollar values ...*
- **Summarize key findings:** *Write a one-paragraph summary of the trends in this spreadsheet of monthly website traffic ...*

Understand error messages

Have you ever received an unfamiliar error message on one of your devices that you needed to understand quickly? A gen AI tool can help you decode it, *and* find solutions fast, so you can get back on track. Next time you get an error message, try prompting a tool to:

- **Explain the error:** *What does “Error 404: Not Found” mean? ...*
- **Troubleshoot the problem:** *My computer says “Kernel Panic.” How can I fix this? ...*
- **Identify potential causes:** *Why am I getting a “Connection timed out” error message in my browser? ...*

Get help with coding

If you’re just starting out with coding or need to get familiar with specific languages for things like web development or data analysis, a gen AI tool can act as a coding assistant. Some tools like [Google Colaboratory \(Colab\)](#), [Gemini Code Assist](#), and [Vertex AI Codey](#) are designed with coding in mind, and can help you do things like generate code or identify functions and bugs.

Remember that it may be difficult to evaluate a coding output if you’re just starting out with code. You may need some extra research or expertise to check for hallucinations in the results. After you’ve entered the code into your input, try prompting the gen AI tool to:

- **Explain code snippets:** *What does this Python code do? Explain it so a true beginner could understand ...*
- **Generate code:** *Write an R program that finds the common information between two input lists ...*
- **Debug code:** *This JavaScript function is supposed to calculate the area of a rectangle, but it's returning the wrong answer. Can you find the error and tell me how to fix it? ...*

Explain complex data

If you’ve ever looked at a chart or graph and had trouble finding an insightful data point, a gen AI tool can provide assistance if you prompt it to:

- **Summarize trends:** *What are the main trends shown in this line graph? Provide one-sentence explanations of each ...*
- **Identify outliers:** *Are there any unusual data points in this scatter plot? ...*
- **Explain correlations:** *Does this bar chart show a correlation between advertising spend and sales? ...*

Beyond interpreting charts and graphs, gen AI tools can also help you create your own—but more on that later.

Gen AI tools can help you explore new ideas, solve problems more effectively and quickly, and ultimately, learn and grow with the knowledge you’ve gained.

One final note: Always remember to **evaluate** outputs when you’re using gen AI to find answers about topics that are new to you. When you’re asking questions about unfamiliar concepts, or working with new languages, you need to be even more discerning with the outputs.

Use meta-prompting to improve and generate new prompts

Half the challenge of getting the most out of generative AI tools is knowing how to ask the right question. **Meta-prompting** is a technique that uses gen AI to help you craft or improve your prompts—turning the tool into a personal prompt designer! Instead of guessing what the best prompt is, you can ask the tool directly for suggestions on how to get the results you want. This approach can help you design better prompts that generate better output.

Meta-prompting

Meta-prompting techniques are sometimes referred to as “automatic prompt engineering.” And much like the **prompting framework (Task, Context, References, Evaluate, Iterate)** that gives us a strong foundation for designing prompts, meta-prompting comes with its own set of best practices, or power-up strategies. These guide meta-prompts down the most effective paths, and they fall into two main categories:

- **Prompt generation strategies:** To help design a prompt from scratch

| Strategy | Use case | Example prompt |
|--|---|---|
| Direct generation Asking a gen AI tool to generate a prompt for you. | You're a human resources representative heading up a job search, and you're ready to welcome your office's newest teammate. | You write: <i>Generate a prompt that could help write a job offer letter to our top candidates.</i> |
| Template request Asking a gen AI tool for an outline to organize the contents of your prompts. | You're the manager of a baseball team, and you're all going to hit the road for some away games. | You write: <i>Create a template specifying the most important elements of a gen AI prompt meant to plan travel for a baseball team and its personnel.</i> |
| Image Using an image as a reference to generate a prompt, or to shape a prompt you've already tried. | You're the owner of a small dog food start-up, and you want your logo to evoke an old oil painting you found online, but describing the painting isn't working. | You paste the image into the prompt, and write: <i>Generate a prompt I can use to create the perfect logo for my dog food company that evokes the style of the attached image.</i> |
| Text Using text as a reference to generate a prompt, or to shape a prompt you've already tried. | You're struggling with an instruction manual for your new computer. | You could upload the manual by attaching a PDF or pasting the text into the prompt window, and write: <i>Using the text, generate a prompt to begin an explanation of the most important concepts in this manual.</i> |
| Meta-prompt chaining Breaking the process of drafting a prompt into a series of sub-prompts. | You need a prompt to create a grant proposal, but with all the detail involved, direct generation isn't working out. | You write: <i>Generate a prompt that identifies the most important qualities of an intelligent and accessible intro paragraph for a grant proposal.</i> From there, you can use the response to construct additional prompts as you build out your proposal. |

- **Prompt refinement strategies:** To fine-tune the prompts you've already designed

| Strategy | Use case | Solution |
|--|--|--|
| Leveling up Asking the gen AI tool outright to elevate your prompting. | You're drafting copy for a local auto body shop's new ad campaign, and your output is missing that fast-and-furious feeling. | From: <i>I'm working on an ad campaign for a local auto body shop's sale on tires and windshields. Generate an announcement for the sale.</i> To: <i>How can I change my initial prompt to produce an ad campaign that uses more engaging language and creates a more memorable impression?</i> |
| Remixing Asking the gen AI tool to synthesize multiple attached prompts into a super-prompt including the key context from each one. | You're working on an intro paragraph to brief potential contractors on a graphic design project, but each prompt's results leave out some key piece of the job. | You can copy all your prompts and instruct the gen AI tool to combine them into a single prompt that retains the most important parts of each one. |
| Style swap Dictating the mood and tone for a prompt to bring out a more colorful, vivid final product. | Your initial prompt asking for a description of Irish folk music returned technical results. It's the right information, but it's boring! You want to know about the soul of the music, and so your meta-prompt should reflect that. | You can instruct the gen AI tool to rewrite your prompt with an emphasis on emotionality, and to use more expressive, passionate language to communicate the experience of the music. |

With meta-prompting, you can enlist gen AI's help to design the perfect prompt, or take one you've already written to the next level. And with power-up strategies to guide your meta-prompting, you'll know just what to do the next time you're having trouble building your prompt into the best it can be. In prompt design, meta-prompting is your roadmap to a successful output.

Simplify multi-step projects with prompt chaining

Some projects are too big to be completed all at once—multi-part work often comes together one step at a time. When working with generative AI tools, some challenges are best overcome by breaking them up into smaller, interconnected tasks, and with prompt chaining, you'll do just that. And taking it step by step also maintains the human-in-the-loop approach, so you can **evaluate** your prompts and results as you continue chaining them together to spot hallucinations.

Prompt chaining



Sometimes, for more complex tasks, it can help to take the output of a gen AI tool and use it as **context** for a new prompt. Connecting prompts is like connecting links in a chain—which is why this process is called prompt chaining.

A great prompt chain is only as strong as the prompts within it, and specificity is the secret to success. Here's an example: You're the head of human resources for an advertising agency, and you've been tasked with designing an onboarding course for new hires. Creating a program from scratch involves a lot of moving parts, so you're going to use prompt chaining to keep the workload manageable.

Here's an example input:

I'm the head of human resources for an advertising agency, and I'm designing an onboarding course for new hires. Generate an outline specifying the most important parts of an onboarding course for an entry-level hire.

And here's an example of the potential output from that prompt:

Onboarding Course Outline for Entry-Level Hires at an Advertising Agency

- 1. Introduce agency culture and values*
- 2. Summarize duties and responsibilities*
- 3. Explain advertising industry fundamentals*
- 4. Break down agency tools and technology*
- 5. Detail client relationships and communication practices*
- 6. Review agency policies and procedures*
- 7. Encourage professional development and growth*

Having that output as a foundation then allows the gen AI tool to carry out all sorts of related assignments. For the next part of the prompt chain, you'll follow up on the second bullet, and expand on the expectations for a new addition to the design department. But keep in mind, some gen AI models don't automatically retain context from one prompt to the next, and may require you to re-enter the relevant information into the prompt yourself.

Here's an example input:

Expand the second bullet point from the attached outline into a paragraph of 100 words, including expectations for their first year.

And here's what that output might look like:

As a new entry-level design hire at our ad agency, you will primarily focus on assisting our senior designers and art directors with various projects. Your responsibilities will include: researching design trends and industry best practices, creating concept sketches and mood boards, preparing presentation materials, and assisting with file organization and management. In your first year, we expect you to develop a strong foundation in design principles and software applications. Additionally, you will have the opportunity to contribute to client projects and gradually take on more independent design tasks.

Now that you've got a draft which will serve as context for your next prompt, you can continue planning the onboarding course. Keep building the chain by using the paragraph to create an activity to keep new hires attentive and engaged throughout the onboarding process.

Here's an example input:

Using the attached text, suggest a three-question quiz to test the reader's familiarity with the content.

And here's the output:

Question 1:

What is the primary responsibility of the new design hire?

- A) Managing the agency's design and copywriting resources*
- B) Creating visually appealing designs for advertising materials*
- C) Writing creative copy for advertisements*

Question 2:

With whom will the new design hire collaborate?

- A) Clients only*
- B) Copywriters and account managers*
- C) Designers from other agencies*

Question 3:

What is expected of the new design hire in terms of professional development?

- A) Staying steady in their current skills*
- B) Avoiding industry trends*
- C) Continuously learning and improving their design abilities*

You'd still like to strategize a little further. With the earlier prompt's paragraph, the tool can also help you design a visual accompaniment.

Here's an example input:

Based on the attached text, generate a visually energetic graphic that congratulates the reader on a correct answer, and features images of art supplies and computers.

And the output:



Note: This image is AI-generated. Results are for illustrative purposes and may vary.

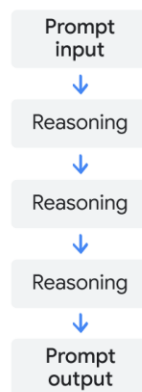
The chain can go on and on; its only limit is your creativity. You can even double back and use chained outputs in different prompts, such as creating onboarding courses for other departments. And if you're not getting the results you're searching for, consider how the prompts in your chain might be split up into chains of their own.

Types of advanced prompt chaining

Chain-of-thought prompting

When you get the details on how a gen AI tool reaches its conclusions, you can ask smarter questions that lead to more effective outputs. With the chain-of-thought prompting technique, you can ask the tool to retrace its path from input to output, listing out the reasoning behind its response step by step. And if your prompt's results miss the intended target, chain-of-thought prompting can help you pinpoint the source of the confusion and understand why gen AI makes the decisions it does.

- You can ask the tool to use chain-of-thought prompting with key phrases like "explain your reasoning" or "go step by step." You may also notice some variety between models, with some gen AI tools requiring more detailed instruction.
- With chain-of-thought prompting, you can also single out a particular step in the tool's process and redirect its decision-making from there.



At the top, a box labeled "Prompt input" points with a downward arrow to a box labeled "Reasoning," then another downward arrow points to a second box also labeled "Reasoning," then another to a third box labeled "Reasoning," and then a final arrow to a box labeled "Prompt output."

For example, maybe the suggested paragraph from the onboarding course example isn't covering everything you need it to, and you want to know how the tool arrived at its recommendation. Returning to your prompt and evaluating the line of reasoning might help you find a new direction. Here's what a potential input might look like:

Draft a paragraph of approximately 100 words detailing the major duties and responsibilities of a new entry-level design hire at an ad agency. Explain your reasoning step by step.

And a potential output from that prompt:

Reasoning:

Step 1: Identify Core Responsibilities

Step 2: Highlight Essential Skills

Step 3: Emphasize Collaboration

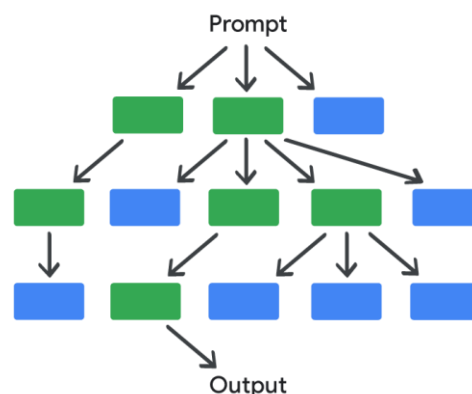
Step 4: Address Industry Standards

Paragraph: As a new entry-level design hire at our ad agency, you will primarily focus on assisting our senior designers and art directors with various projects. Your responsibilities will include: researching design trends and industry best practices, creating concept sketches and mood boards, preparing presentation materials, and assisting with file organization and management. In your first year, we expect you to develop a strong foundation in design principles and software applications. Additionally, you will have the opportunity to contribute to client projects and gradually take on more independent design tasks.

You'd also like the paragraph to mention joining the agency's community of coworkers, so instructing the tool to incorporate that item specifically could get you back on track.

Tree-of-thought prompting

There are times when you might not be sure about the most productive way to go from one prompt in a chain to the next. Tree-of-thought prompting is a technique for exploring multiple possible solutions at once, helping you find the most effective approach. Instead of following a single chain of thought, you generate several responses to your prompt, then evaluate and choose the best ones to pursue. If one output doesn't work, you can easily return to a previous branch and try another option until you find the best solution.



The chart begins with a bubble labeled "Prompt" at the top, branching off to three sub-prompts beneath it, with unsuccessful options represented by blue boxes and possibly successful options in green. At center, a green possibly-successful sub-prompt box branches off to four more in the next row down. Those branch off to another row, and in that row, a green box branches down once more to a successful output.

Returning to the earlier example, imagine you're generating a cover image for your course. With tree-of-thought prompting, you might input a prompt similar to this:

Imagine three different designers are pitching their design to me.

All designers will write down one step of their thinking, then share it with the group. Then all experts will go on to the next step, etc. If any expert realizes they're wrong at any point, then they leave.

The question is: Generate an image that's visually energetic, and features images of art supplies and computers. Show me three suggestions in very different styles from simple to detailed and complex.

The AI tool will generate three different styles of images featuring computers and art supplies: one cartoonish, and the other two more photorealistic.



Note: These images are AI-generated. Results are for illustrative purposes and may vary

With multiple options to choose from, you decide that a cartoonish style is best for the cover image, so you continue prompting the tool to create variations of that style.



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And you continue this process, exploring different branches of the tree until you find the perfect fit! If at any point you're dissatisfied with the output, you simply ask the tool to return to a previous branch of the conversation and explore other designs.

In some cases, combining tree-of-thought with chain-of-thought can give your prompting the boost it needs. When you need insight on a tool's reasoning *and* other options to take within that reasoning, the two techniques can work perfectly together.

Be mindful, however, that advanced prompt chaining may work differently in various gen AI models. Some more advanced AI models, for example, will automatically detect opportunities for chain-of-thought or tree-of-thought reasoning without being specifically instructed to do so. In those situations, experimentation confirms the best results; repeat your prompt with various models and compare their outputs.

Prompt chaining makes difficult projects easier by dividing a large task into simpler, sequential prompts. But remember, this process still needs a human's critical thinking skills to work best. With your guidance, prompt chaining can help you evaluate, direct, and correct your prompting process, so you can meet your deadlines with ease.

Ideas for AI agents

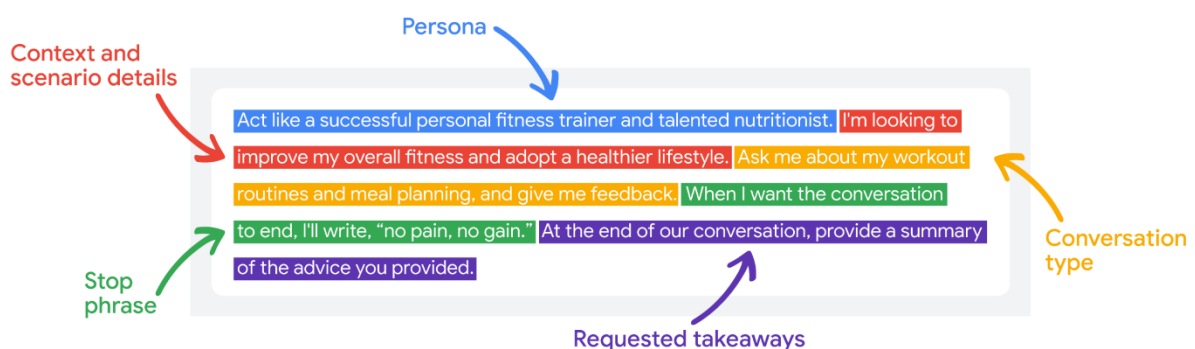
What if you could turn a generative AI tool into your own team of experts, ready to help you take on any challenge? What if they were speedy, creative, and able to roleplay through all kinds of scenarios to help you with work? Well, there's no "what if" required—that's what an AI agent is designed to do. You can create an AI agent to help you with whatever you need, from writing a speech to learning about coding. Here, you'll learn how to craft your own and start working smarter.

Design AI agents

To create an agent, you'll prompt the gen AI tool as you usually would, following the **prompting framework**, but you'll focus on **persona** and **context** more than ever. The more detail you include about what you want the AI agent to do, and how you want it to respond, the more effective it will be.

Here's how to create an AI agent:

- Assign the persona you want the gen AI tool to take on. Example: "Act like a successful personal fitness trainer and talented nutritionist."
- Give context and details about the scenario and conversation. Example: "I'm looking to improve my overall fitness and adopt a healthier lifestyle."
- Specify conversation types or the kinds of interaction you want the tool to support, and set some "rules" for the AI agent to follow. Example: "Ask me about my workout routines and meal planning and give me feedback."
- Provide a stop phrase you can use to end the conversation. Example: "When I want the conversation to end, I'll write, 'no pain, no gain.'"
- Ask the tool to provide takeaways or improvement areas after the conversation ends. Example: "At the end of our conversation, provide a summary of the advice you provided."



Practice skills

Have you ever wanted to improve your public speaking skills? Or practice a difficult conversation you're planning to have? AI agents can help by acting as a digital coach that can give you feedback on a wide range of scenarios, and build your skills in the process.

Consider this one: you're a freelance web developer looking to improve your negotiation skills to close more deals, build stronger relationships, and lock in better rates and terms. You can create an AI agent

that takes on the persona of a seasoned negotiator and business consultant to help you do just that. To practice a skill with an AI agent, add in a lot of context about the expertise you're honing, and be specific about what it can do to help you achieve your goals.

Here's an example:

I'm a freelance web developer. I want to brush up on my negotiation skills so I can demand higher rates, establish clear project boundaries, and create mutually beneficial relationships with my clients. Take on the persona of a seasoned business consultant with serious expertise in negotiation strategies for freelance web developers. I'd like you to assess and improve my negotiation skills by roleplaying with me through example negotiation scenarios that I might encounter at work and practical exercises, providing industry-specific advice and feedback as I respond. When I want to end the roleplay, I'll write "I'm finished." When our conversation is over, provide me with a list of personalized, actionable ways I can improve my negotiation skills.

Get specific feedback

An AI agent can give you suggestions and recommendations for a particular task. For example, you can create an AI agent that takes on the persona of an editor and helps you change or improve a piece of your writing and provides feedback on your style, format, tone, and more.

Suppose you want to submit a piece of writing to a magazine. Before you submit it, an AI agent can provide critiques and suggestions. To receive feedback on a writing piece, paste your work into your prompt and get specific about your desired outcome, the context, and the persona you want the tool to take on. Note that depending on how much text you want to include in your input (how long of a document you need critiqued), you might need a gen AI tool with a long context window, which allows for the processing of a large amount of information in different formats at once. With that in mind, you could craft a prompt like this:

I'm submitting a creative writing piece to a literary magazine for a prize. The magazine is known for its fantasy and sci-fi content. The judges are accomplished fantasy writers and will be choosing a winner based on worldbuilding, originality, and technical skill.

Take on the persona of one of the magazine's judges and critique my piece through the lens of those key areas. Provide suggestions for changes and improvements to further meet the competition criteria.

The stop phrase will be "I'm ready to submit."

Attached are the submission and judging guidelines, a reference piece that won the prize last year, and my story: [upload documents].

Learn something new

An AI agent can help you learn more about an unfamiliar topic or even help you learn a whole new skill by taking on the persona of an expert.

Imagine you have Spanish-speaking clients who prefer to communicate in Spanish. You don't know the language, but you want to learn so you can build more of a rapport and collaborate more closely with them on your projects. An AI agent can help you learn the language by taking on the persona of a Spanish tutor who delivers increasingly difficult lessons, crafts activities and scenarios, chats with you in Spanish, quizzes you, provides feedback based on your responses, and even gives you a little bit of homework. To learn something new, write a prompt that includes a lot of information and detail about what you want the AI agent to do for you.

I'm trying to learn Spanish to better communicate with my clients who live in Guatemala. Take on the persona of a skilled Spanish tutor and help me learn Spanish. I want you to teach me Spanish by delivering increasingly difficult lessons, crafting educational activities and scenarios, chatting with me in Spanish, and quizzing me. Correct my errors when I respond and call out areas of improvement. Provide feedback in English only. When I want to end the lesson, I'll write "adios." After we finish our conversation, provide me with a personalized list of vocabulary words, conjugations, and tips I should study to become a better Spanish speaker.

Collaborate on a project

While AI agents are great at helping with broad goals and tasks, they're also great at honing in on super specific items you need to cross off your to-do list.

Pretend you're a city planning researcher looking for some additional funding for a new project. If you create an AI agent that takes on the persona of a grant writer and give it information about the grant by providing a link or uploading an image of it, you can have it act as your partner to help you complete the proposal based on the grant's requirements and evaluation criteria. Provide the context, specify the persona, and add as much detail as possible for what you want to achieve, like this:

I'm a city planning researcher seeking a grant for a revitalization project. I need assistance crafting a compelling and competitive grant proposal. Take on the persona of an experienced grant writer with expertise in revitalization grants and act as my collaborative partner. Let's work together on the proposal, brainstorming ideas, refining the language, and ensuring it aligns with the grant's requirements and evaluation criteria. We'll focus on developing the following key components:

- Project Summary: A concise and engaging overview of the project's purpose, goals, and expected outcomes
- Project Description: A detailed explanation of the project's activities, methodology, and timeline
- Budget breakdown: A comprehensive and itemized budget, justifying each expense and demonstrating financial responsibility

As I write each section with you, provide insights for how to strengthen them, making sure my work is clear, persuasive, and impactful. The goal is for the proposal to align with the funder's priorities and showcase the project's potential for significant impact. When I want to end our session, I'll write "We're done." After our conversation ends, provide a list of takeaways and learnings from our working session that I can consider next time I write a revitalization grant.

Here is information about the grant and its evaluation criteria: [upload document].

More AI agent ideas

These are only a few ways you can utilize gen AI tools to build AI agents to accomplish your goals. For more ideas on how best to use AI agents, check out the following resources:

- **Professor Ethan Mollick's newsletter, [One Useful Thing](#):** While not solely focused on AI agents, this newsletter does feature practical gen AI tips and prompts, as well as research-based insights and thought-provoking discussions on how AI is transforming different areas of our lives.
- **[Langchain](#):** This is a popular open source framework that uses low code or no code to string AI agents together to accomplish tasks.

- **Google Vertex AI Agents:** These allow users to design and integrate a conversational user interface into their mobile apps, web applications, devices, bots, interactive voice response systems, and more. They can analyze multiple types of input from customers, including text or audio inputs (like from a phone or voice recording), and respond through text or with synthetic speech. Using Vertex AI Agents, users can provide new and engaging ways for people to interact with their product.
- **Gems:** These are customizable AI personas you create within Gemini, each with specific skills and knowledge, that are ready to assist you with specific tasks or delve into any topic you're interested in. A specific feature built into Gemini, they provide a structured way to create and manage AI agents. There are a few premade Gems you can work with, including a learning coach, brainstormer, career guide, writing editor, and coding partner.

An AI agent can act as your trusty sidekick across all kinds of use cases. They're not just here to make things fun (though they certainly do that), they're also powerful tools to help you level up at work and in day-to-day life. Go ahead and give it a try—you might be surprised at what you can accomplish with the help of an AI agent.