

SECRETS OF AI PROMPT ENGINEERING

Learn how to unlock the power of AI



Sam Wocks

ABOUT ME

First and foremost, thank you for downloading this eBook. Your journey into the world of AI Prompt Engineering is about to take a transformative turn.

I'm Sam Wocks, a Senior Product Manager with a decade of experience in global software management. Having led transformative projects at Ford Motor Company and armed with an MBA from the University of Michigan, I've harnessed tools like JIRA, Python, and Generative AI to innovate and automate at scale.

In today's rapidly evolving technological landscape, I've witnessed countless individuals and businesses struggle to harness the full potential of AI. With this eBook, my primary intention is to democratize knowledge, ensuring that everyone, regardless of their background, has access to the transformative power of AI Prompt Engineering. I genuinely believe that by sharing my insights and experiences, I can empower others to navigate the AI realm with confidence, fostering innovation and growth in their respective fields.

Through my website, [AILAUNCHr.com](https://www.ailaunchr.com), I offer a range of AI Consultant Services, aiming to bridge the gap between businesses and the ever-evolving world of AI. With this eBook, I hope to share my insights, helping you harness the power of effective prompt engineering.

Please reach out to me, I'd love to connect and answer any AI-related questions!



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WHY LEARN AI PROMPTING?



In the world of AI, the difference between an average answer and a groundbreaking insight is often just one well-phrased question.

How many times have you found yourself **unsatisfied** with the responses you get from AI?

Have you ever wished you knew the '**magic words**' to get the most helpful and precise answers out of AI, feeling that maybe you're just not asking the right way?



914%
Better

AI Prompting is the key to transforming those 'ok' answers into precise, invaluable insights. On logical reasoning tests, AI prompt techniques improved output by **10x**.



This isn't just about better questions; it's about unlocking value.

Don't let the potential of AI slip through your fingers. Master it through and be the catalyst for transformative results.

WHY LEARN AI PROMPTING?

Boost Creativity



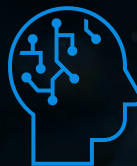
AI prompting isn't about replacing the human touch, but enhancing it. It can provide inspiration when you're stuck, offering new angles and perspectives.

Save Time



Speed up tasks by getting AI-driven suggestions. Spend less time thinking and more time acting.

Workplace Performance



Use AI prompting to optimize tasks, making your output more efficient and effective, thus standing out among peers.

Enhanced Problem Solving



AI can provide alternative solutions and perspectives that might not be immediately obvious, giving you a broader toolkit for tackling challenges.

Career Opportunities



As businesses increasingly integrate AI into their operations, individuals adept at AI prompting will be highly sought after...and paid VERY well.

ROLE PROMPTING

WHAT IS IT?

By starting your prompt with simply telling the AI to "act" or "write like" a specific character or professional, you can tailor its responses to fit a particular style or depth. It's like giving your AI a role in a play, and it performs accordingly. The best part? It's always beneficial to use this technique, ensuring you get the most relevant and exciting outputs every single time.

WHEN TO USE IT?

Use Role Prompting at the beginning of every AI prompt. It is the easiest AI Prompt technique that you can implement to enhance the depth, precision, and professionalism of AI-generated business content.



Without Role Prompting

Input:

```
Write a description for a new smartwatch.
```

Output:

```
Introducing our new smartwatch. It tracks health metrics and shows notifications.
```

With Role Prompting

Input:

```
Act like a tech-savvy marketing expert with 20-years of experience. Write a description for a new smartwatch.
```

Output:

```
Unveiling the future on your wrist! Our latest smartwatch seamlessly blends cutting-edge technology with sleek design. Dive deep into your health analytics, stay connected with real-time notifications, and elevate your tech game. It's not just a watch; it's a lifestyle revolution.
```



[...] SHOT PROMPTING

There are 3 types of Shot Prompting that are useful for different needs. Shot Prompting refers to how many good/bad examples you provide in the prompt.

Zero-Shot Prompting

When **no examples** are provided in the prompt. This is the quickest and usually works well, so it's a good starting place.

Single-Shot Prompting

When **1 example** is provided. This helps the AI better know what you're looking for. Best when Zero-Shot prompting isn't enough, and providing more examples is too time consuming.

Few-Shot Prompting

When **>1 examples** are provided. This is best for complex tasks or when Zero-Shot prompting isn't enough, but this technique may take more time to input.

ZERO-SHOT PROMPTING

WHAT IS IT?

This is how most people start off by interacting with AI. With this, you don't give the AI any examples, you simply ask your question. This technique often works since the AI, having been trained on vast amounts of data, can understand and respond accurately. This will showcase an AI's intuitive understanding.

WHEN TO USE IT?

For less complex tasks, or the first time you try a prompt or question.



Zero-Shot Prompting

Input:

```
What are key factors to think about when starting an AI company?
```

Output:

```
When starting an AI company, define a valuable problem, assemble a skilled team, secure quality data, protect your tech legally, plan a viable business model, iterate on product development, consider regulations, secure funding wisely, strategize for market entry, prioritize scalability, ensure user-friendliness, and maintain ethical practices. Stay adaptable and focused on a clear, long-term vision.
```


SINGLE-SHOT PROMPTING

WHAT IS IT?

When you provide the AI with an example output, it leverages that to generate accurate and contextually relevant responses. It's like giving the AI a nudge in the right direction, and it takes off from there. It's a game-changer for tasks that require a touch of personalization or context. Imagine you're teaching someone a new skill, and all it takes is one example for them to grasp the concept and replicate it!

WHEN TO USE IT?

When Zero-Shot Prompting isn't enough, try this! One-Shot prompting is fantastic when you need an output to be in a specific format, if the task is more complex, or if you have an example that you like. This provides slightly more time to input than Zero-Shot Prompting, but the time is usually worth it!



Single-Shot Prompting

Input:

```
When introducing a new feature, our standard format is:
```

```
"Dear [Name],  
We're thrilled to introduce [Feature Name], our latest addition  
designed to [Feature Benefit]. We believe this will enhance your  
experience and look forward to your feedback."
```

```
Write an email about a new data analytics tool.
```

Output:

```
Dear [Name],  
We're thrilled to introduce 'DataMaster Pro', our latest addition  
designed to streamline your data analysis and provide actionable  
insights. We believe this will elevate your data-driven decisions  
and look forward to your feedback.
```

FEW-SHOT PROMPTING

WHAT IS IT?

When you provide 2 or more (good or bad) example outputs. By giving the AI multiple examples, you're guiding its responses to be more aligned with the desired outcome. It's like giving the AI a mini crash course right before it performs a task.

WHEN TO USE IT?

When you're dealing with tasks that require a deeper understanding or a specific context that might be challenging to convey with just one example. It's especially beneficial when the task at hand is complex or when you want the AI to follow a certain style or format consistently. If a single example doesn't do the trick, and you find the AI's output lacking, that's your cue to employ Few-Shot Prompting.



Few-Shot Prompting

Input:

Please improve the resume bullet point using the ACR (Action Context Result) writing structure:
"Created an automated request portal, sped up request time by 79%."

Good Example 1: "Lowered the hospital mortality rate by 10% by educating nurses in new protocols which translates to 200 lives saved per year."

Good Example 2: Implemented a new digital marketing strategy in response to dwindling sales, boosting online sales by 25% over six months, resulting in an additional revenue of \$500,000.

Output:

Developed an automated request portal in response to prolonged manual processing times, improving user experience and reducing request turnaround by 79%.



[...] CHAIN-OF-THOUGHT (CoT)

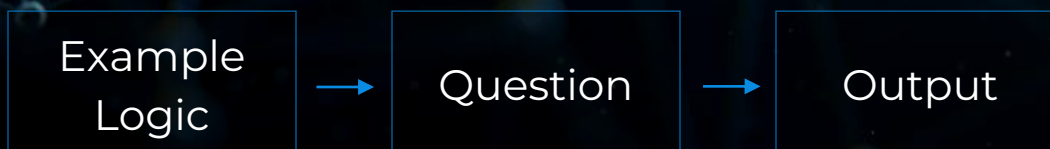
Chain-of-Thought prompting encourages the AI model to think through each prompt in a more step by step manner, which can drastically improve the output for more complex needs. There are 2 types of Shot Prompting that are useful for different needs. One is more manual, but can offer higher precision, while the other is automatic.

Standard CoT Prompting

Best for complex reasoning tasks, where the AI model is struggling to reason properly using other methods. Really good for when you have one or more examples of the reasoning process that you would like to follow.

Automatic CoT Prompting

Also called “Zero-Shot Chain of Thought”, this is much faster to input into prompts. Highly recommended to start with this technique, and only if this fails then to go to manual CoT Prompting.



CHAIN-OF-THOUGHT (CoT)

WHAT IS IT?

Imagine you're teaching someone to solve a puzzle, and instead of just showing them the final solution, you walk them through each step of your thought process. This is the essence of Chain of Thought (CoT) prompting. By providing the AI with examples that detail the reasoning process, the AI not only understands the task better but also showcases its thought process when generating an answer. Think of it as giving the AI a roadmap to follow, ensuring it doesn't get lost along the way. Use this and you'll find your AI outputs becoming clearer, more logical, and incredibly precise!

WHEN TO USE IT?

When you're dealing with tasks that require clear reasoning or step-by-step explanations, such as arithmetic problems, commonsense queries, and symbolic reasoning tasks. In essence, use this whenever you want your AI to "show its work" and ensure accuracy.

Standard Prompting

Input:

Q: The cafeteria had 23 apples. If they used 20 to make lunch and bought 6 more, how many apples do they have?

Output:

A: The answer is 27

✗ Incorrect

Chain-of-Thought (CoT) Prompting

Input:

Q: Roger has 5 tennis balls. He buys 2 more cans of tennis balls. Each can has 3 tennis balls. How many tennis balls does he have now?

A: Roger started with 5 balls. 2 cans of 3 tennis balls each is 6 tennis balls.

$5+6=11$. The answer is 11.

Q: The cafeteria had 23 apples. If they used 20 to make lunch and bought 6 more, how many apples do they have?

Output:

A: The cafeteria had 23 apples originally. They used 20 to make lunch. So they had $23-20=3$. They bought 6 more apples, so they have $3+6=9$. The answer is 9. **Correct ✓**

AUTOMATIC CoT

WHAT IS IT?

Automatic Chain of Thought Prompting – or Zero Shot CoT Prompting – is the simplest way to get Chain-of-Thoughts into your prompts. Instead of providing specific reasoning steps, simply add “Let's think step by step” at the end of your prompt.

WHEN TO USE IT?

Add to the end of every prompt. This technique shines brightest when you're dealing with complex problems or when you don't have a plethora of examples to feed the AI. It ensures the model takes a systematic approach, enhancing the quality of its responses.

Standard Prompting

Input:

Q: The cafeteria had 23 apples. If they used 20 to make lunch and bought 6 more, how many apples do they have?

Output:

A: The answer is 27

✘ **Incorrect**

Chain-of-Thought (CoT) Prompting

Input:

Q: The cafeteria had 23 apples. If they used 20 to make lunch and bought 6 more, how many apples do they have?

Let's think step by step.

Output:

A: The cafeteria starts with 23 apples. Out of these 23 apples, they used 20 apples to make lunch. So, we subtract the 20 apples from the original amount: $23 - 20 = 3$ apples. The cafeteria then buys 6 more apples. So, we add these 6 apples to the remaining 3 apples: $3 + 6 = 9$ apples. **Correct** ✓

SELF-CONSISTENCY (SC)

WHAT IS IT?

Think of self-consistency as asking the same question multiple (at least 3) times, then choosing the answer that appears most often – hence self-consistency. This method ensures that the AI doesn't just think linearly but explores diverse ways to arrive at a solution.

WHEN TO USE IT?

For tasks that require arithmetic and complex reasoning, and when Chain-of-Thoughts (CoT) isn't quite enough. It is best when used in addition to CoT prompting. The downside is that it takes more time to generate results.



Self-Consistency + CoT

Input:

Q: If there are 3 cars in the parking lot and 2 more arrive, how many cars are in the parking lot?

A: There are 3 cars in the parking lot already. 2 more arrive. Now there are $3+2=5$ cars.

-

Q: Janet's ducks lay 16 eggs per day. She eats 3 every morning and bakes muffins every day with 4. She sells the rest for \$2 per egg. How much does she make every day?

Answer 1



A: She has $16-3-4=9$ eggs left, so she makes $\$2*9=\18 per day.

Answer 2



A: This means that she sells the remainder for $\$2*(16-4-3)=\26 per day.

Answer 3



A: She eats 3 for breakfast, so she has $16-3=13$ left. Then she bakes muffins, so she has $13-4=9$ left. She has $9*\$2=\18 per day.

A: ✓
\$18

TREE-OF-THOUGHTS (ToT)

This method is advanced, but extremely useful if used properly, please be patient!

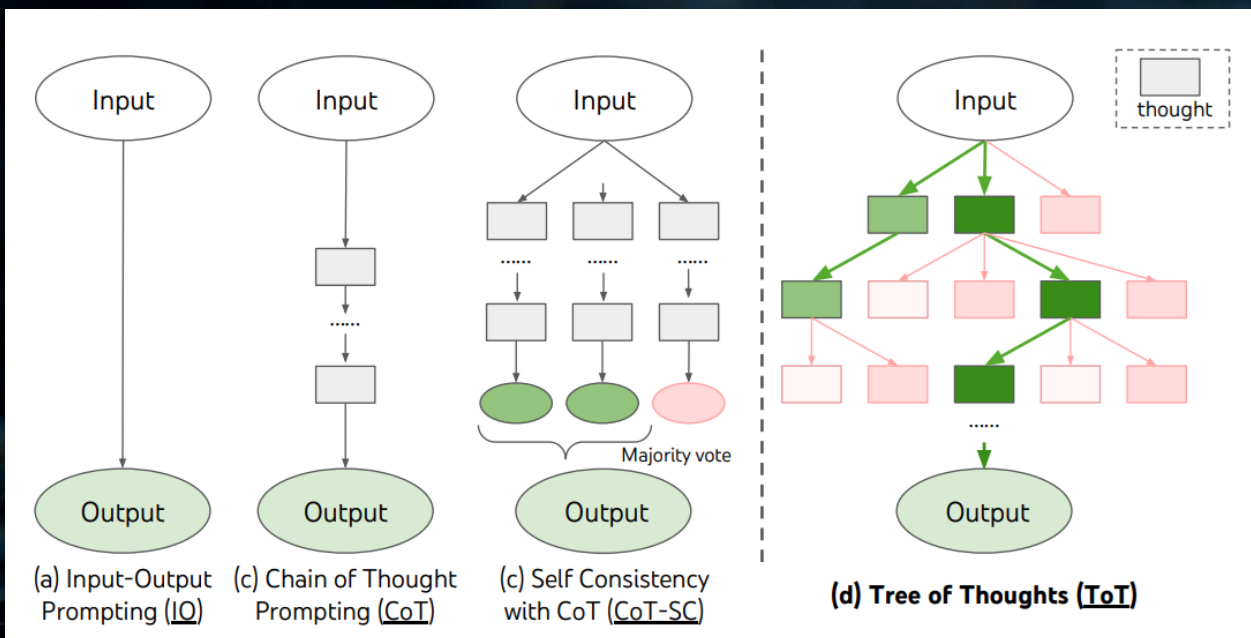
WHAT IS IT?

Tree of Thoughts (ToT) prompting breaks up the problem into intermediate steps and has the AI model evaluate itself during each step of the process. This can then be combined with search algorithms to systematically explore ideas (with lookahead and backtracking) that look promising.

WHEN TO USE IT?

For the most complex tasks that require deep exploration, strategic lookahead, or involve many important factors in parallel – such as developing a business plan. This method gets the best results compared to Few-Shot, CoT, and SC+CoT – but may take more time to prompt and generate results effectively.

OVERVIEW



For many complex reasoning tests, Tree of Thoughts (ToT) gives ~10x (914%) better responses, evidenced by the report on the next page. This makes it by the far the best prompting technique for those applications, if you have the patience to generate it.

→ *Continued*



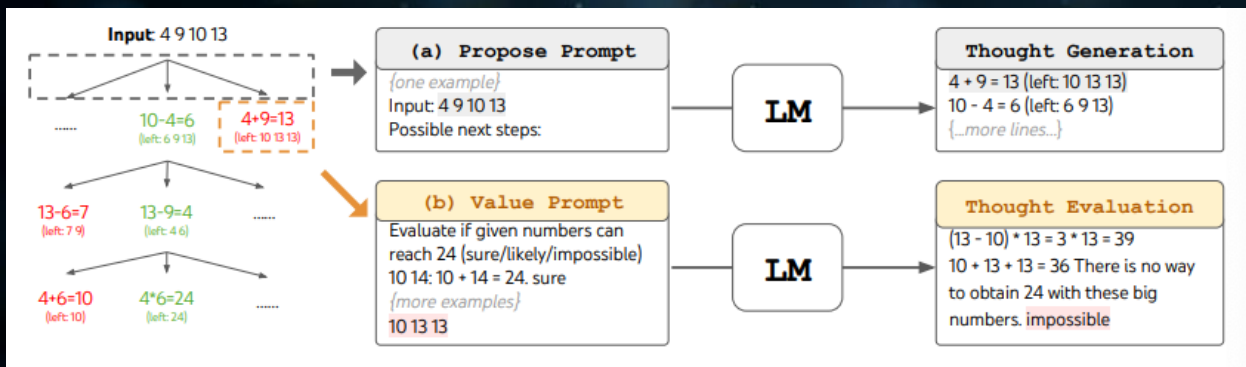
TREE-OF-THOUGHTS (cont.)

OPTION #1 – IF YOU CAN CODE

If you have the technical abilities to implement – requires coding and API retrieval knowledge – coding is a highly effective method to implement Tree of Thoughts (ToT). Luckily, you can use the code directly from these links on GitHub: [link 1](#), [link 2](#).

One example, from [this](#) research paper, shows ToT used in a math game called 24. The goal is to determine the math steps to get the numbers to equal 24 from a set of numbers.

ToT 1st generates multiple possible answers, then eliminates unlikely intermediate steps as soon as possible – in this case, if the numbers were too big (>24). The model then iterates for remaining likely candidates until a successful answer is



Method	Success
IO prompt	7.3%
CoT prompt	4.0%
CoT-SC (k=100)	9.0%
ToT (ours) (b=1)	45%
ToT (ours) (b=5)	74%
IO + Refine (k=10)	27%
IO (best of 100)	33%
CoT (best of 100)	49%

Table 2: Game of 24 Results.

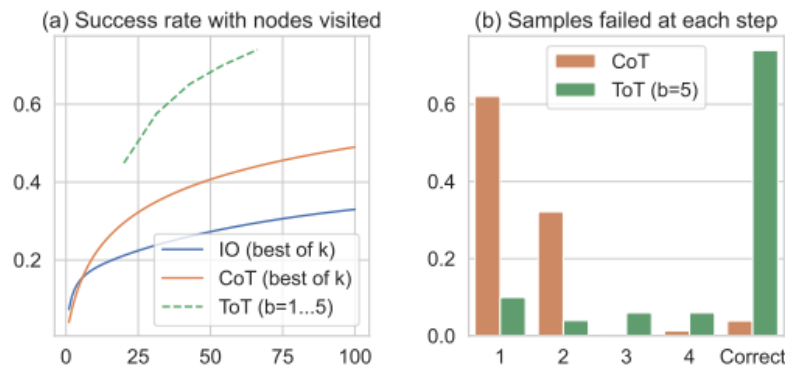


Figure 3: Game of 24 (a) scale analysis & (b) error analysis.

*** If this seems confusing, don't worry! Options #2 and #3 get easier to implement and is a better start. ***

➔ Continued

TREE-OF-THOUGHTS (cont.)

OPTION #2 – NO CODE MANUAL

It is still possible to use ToT without implementing code, it just takes more time to generate each outcome. Try breaking it out into the steps below.

- 1 Generate many outputs.
- 2 Self-Evaluate – one at a time – based on key criteria (can be manual or auto.).
- 3 Trim worst outcomes (eliminate that branch of thought).
- 4 For remaining paths, repeat – one at a time – until you reach an answer.

1 Generate Outputs

Input:

What are 3 possible AI businesses that I can start?

Output:

Healthcare AI Diagnostics and Monitoring.
AI-driven sustainable Agriculture.
Personalized Education Platforms.

2 Self-Evaluate

Input:

Rate each business on a scale of 1-100 in terms of which is likely to succeed. Consider barriers to entry, outside funding required, and my own personal information. I have expertise in prompt engineering, software project management, and go-to-market strategic thinking. I have \$50k to start the business.

Output:

1. AI Healthcare → 45/100
2. AI Agriculture → 60/100
3. AI Education → 85/100

✗ Eliminate
✓ Keep
✓ Keep

3



Repeat. Can change criteria each round.

→ Continued

TREE-OF-THOUGHTS (cont.)

OPTION #3 – NO CODE AUTOMATIC

If the “Code” or “No Code Manual” versions of Tree of Thoughts (ToT) seem too technically difficult or like they may take too much time to implement, then this method may be great for you!



Tree of Thoughts (ToT) – No Code Auto.

Input:

Simulate a boardroom meeting, with each C-suite executive having decades of experience and an expert in their field (COO, CTO, CEO, etc.). There is also an outside marketing consulting company present.

Each expert will share one step of their strategy, then build upon the previous step. At each step, the person proposing will provide benefits/risks to their strategy, and the next person will critique that, build upon a previously mentioned strategy, or come up with a new proposal. The originator the idea can change their minds if a convincing argument is made. The meeting doesn't end until everyone agrees on a proposal, and this can take as much time as it needs to. Generate one unique message per person, and ask at the end “Do you want to continue (Y/N)?”

The company is brainstorming the launch of a new eco-friendly water bottle. The company has recently developed a new biodegradable water bottle. How should the company proceed?

BONUS – PROMPT MAKER

WHAT IS IT?

A prompt that can help you create a prompt from scratch, by answering questions, and using many of the best prompt engineering techniques.

WHEN TO USE IT?

When you're just beginning your prompt engineering journey, struggling to get proper results from your prompts, or getting stuck on how to phrase a prompt.



Help Make a Prompt

Input:

Act as a prompt engineering expert with 20 years of experience with various AI prompt techniques such as Role Prompting, Zero-Shot Prompting, Few-Shot Prompting, Chain-of-Thought (CoT) Prompting, Self-Consistency Prompting, Tree-of-Thought (ToT) Prompting, etc.

Your task is to become my Prompt Creator. Your goal is to help me craft the best possible prompt for my needs. You will follow the following process:

1. Your first response will be to ask me what the prompt should be about. I will provide my answer, but we will need to improve it through continual iterations by going through the next steps.
2. Based on my input, you will generate 3 sections. a) Revised prompt (provide your rewritten prompt. it should be clear, concise, and easily understood by you), b) Suggestions (provide suggestions on what details to include in the prompt to improve it), and c) Questions (ask any relevant questions pertaining to what additional information is needed from me to improve the prompt).
3. We will continue this iterative process with me providing additional information to you and you updating the prompt in the Revised prompt section until it's complete.

Let's think step by step.



THANKS FOR READING!

As we reach the end of this journey, I hope you've gained valuable insights into the transformative power of AI Prompt Engineering. The world of AI is vast and quickly evolving, but with the right tools and knowledge, you can leverage it to get a competitive advantage. Thank you for allowing me to be a part of your AI journey!

Please reach out if you've liked the eBook, if you want to connect, or have any AI-related questions that I can help you with.

Learn more about harnessing the power of AI for your business. Schedule a consultation today at [ailaunchr.com](https://www.ailaunchr.com)!

Thanks!
Sam Wocks

AI CONSULTING



Business Efficiency

- AI Integration
- AI Strategy
- Reduce Labor-Intensive Tasks



Prompt Engineering

- Few-shot Prompting
- Role Prompting
- Tree of Thoughts



Job Applications

- Resume Bullet Points
- Cover Letter Generation
- Interview Prep



Productivity Boost

- AI Skills Development
- Automation Flows
- Brainstorm Generation



Chatbots

- Reduced Manual Labor
- Customized Per Site
- Better Customer Engagement



Business Startups

- Identify Market Niches
- Market Test Ideas
- Marketing Automation

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