# Introduction to Prompt Engineering


# AI Engineer

## 22: Prompt engineering

Prompt engineering in AI involves crafting and refining the input instructions given to an AI model, especially in language models like GPT-3 or GPT-4, to achieve the most accurate and relevant outputs.

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DA

I want to create some advertising copy to use in Google Ads. Give me three alternative ad headlines and copy to test showing the maximum character limit Google has for each part of the ad

Here are three alternative ad headlines and copies that you can test in Google Ads:

1. Ad Headline: Professional Office Cleaning Services
   Description: Keep your office spotless with our top-notch cleaning services. Schedule a quote now!
   Display URL: www.yourwebsite.com/cleaning
2. Ad Headline: Improve Your Office's Appearance
   Description: Upgrade to our professional cleaning services and improve your office's appearance. Contact us now!
   Display URL: www.yourwebsite.com/cleaning
3. Ad Headline: Deep Cleaning Services for Professional Offices
   Description: Unlock the full potential of your office with our deep cleaning services. Schedule a quote today!
   Display URL: www.yourwebsite.com/deep-cleaning

It's important to note that Google Ads has a character limit for each part of the ad, which are:

- Ad Headline: 30 characters
- Description: 90 characters
- Display URL: 15 characters

It's important to keep in mind that your ad should be clear, concise, and compelling, while also including a clear call to action. Using action-oriented language, such as "schedule a quote" or "contact us now" encourages people to take action after reading the ad.

Also, you can use ad extensions like call extension, location extension, sitelink extension, structured snippets, etc. which can take your ad to the next level, by providing more information and making it more engaging.

Output in

# Large Language Models

## Base LLM

Predicts next word, based on text training data

Once upon a time, there was a unicorn
that lived in a magical forest with
all her unicorn friends

What is the capital of France?
What is France's largest city?
What is France's population?
What is the currency of France?

## Instruction Tuned LLM

Tries to follow instructions

Fine-tune on instructions and
good attempts at following those instructions.

RLHF: Reinforcement Learning with
Human Feedback

Helpful, Honest, Harmless

What is the capital of France?
The capital of France is Paris.

# Prompt basic principles

**Principle 1:** Write clear and specific instructions (short does not mean clear)

- Tactic 1: Take into account the output of the message maybe you need JSON or HTML

```
text = f"""
You should express what you want a model to do by \
providing instructions that are as clear and \
specific as you can possibly make them. \
This will guide the model towards the desired output, \
and reduce the chances of receiving irrelevant \
or incorrect responses. Don't confuse writing a \
clear prompt with writing a short prompt. \
In many cases, longer prompts provide more clarity \
and context for the model, which can lead to \
more detailed and relevant outputs.
"""
prompt = f"""
Summarize the text delimited by triple backticks \
into a single sentence.
```{text}```
"""
response = get_completion(prompt)
print(response)
```
```

# Prompt basic principles

**Be Specific and Clear:**

Bad: "Write about energy."

Good: "Write a short article about the benefits of renewable energy."

**2. Provide Context:**

Improved Prompt: "Write a short article highlighting the environmental and economic benefits of renewable energy, such as solar and wind power."

**3. Use Direct Language:**

Further Improved: "Explain in simple terms the environmental and economic benefits of using renewable energy sources like solar and wind power."

**4. Set the Tone and Style:**

Styled Prompt: "Write an engaging and optimistic article about how renewable energy is beneficial for our planet and economy, suitable for a blog audience."

- Tactic 2 : Ask the model to check whether conditions are satisfied

- Tactic 3:  "Few-shot" prompting, provide examples

```
prompt = f"""
You will be provided with text delimited by triple quotes.
If it contains a sequence of instructions, \
re-write those instructions in the following format:

Step 1 - ...
Step 2 - …
…
Step N - …

If the text does not contain a sequence of instructions, \
then simply write \"No steps provided.\"

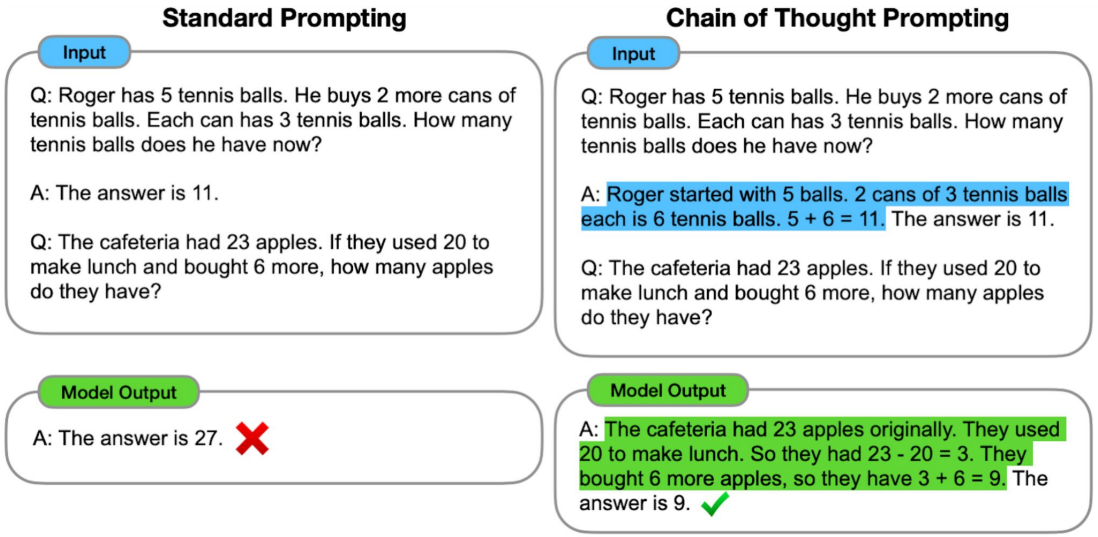
\"\"\"{text}\"\"\"
"""
```

**Principle 2:** Give the model time to “think”

- Tactic 1: Specify the steps to finish a task

```
continued exploring with delight.
"""
# example 1
prompt_1 = f"""
Perform the following actions:
1 - Summarize the following text delimited by triple
backticks with 1 sentence.
2 - Translate the summary into French.
3 - List each name in the French summary.
4 - Output a json object that contains the following
keys: french_summary, num_names.

Separate your answers with line breaks.

Text:
```{text}```
"""
```
```

**Principle 2:** Give the model time to “think”

- Tactic 2: Instruct the model to work out its own solution before rushing to a conclusion



# Prompt Engineering practice

- Practice notebook

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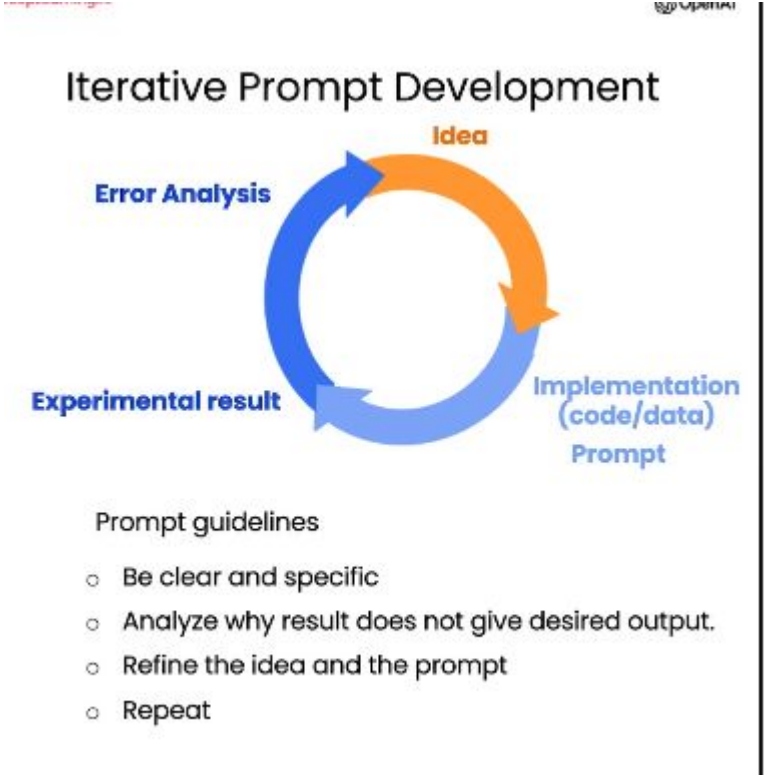
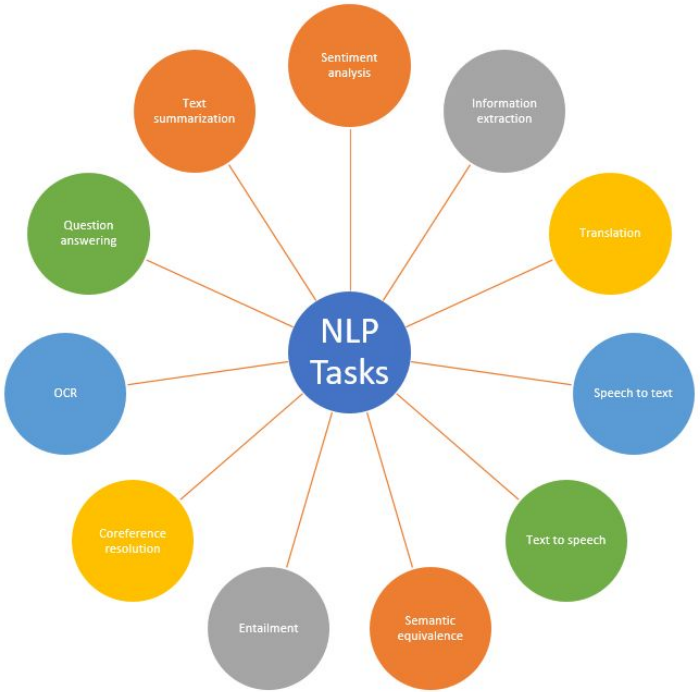


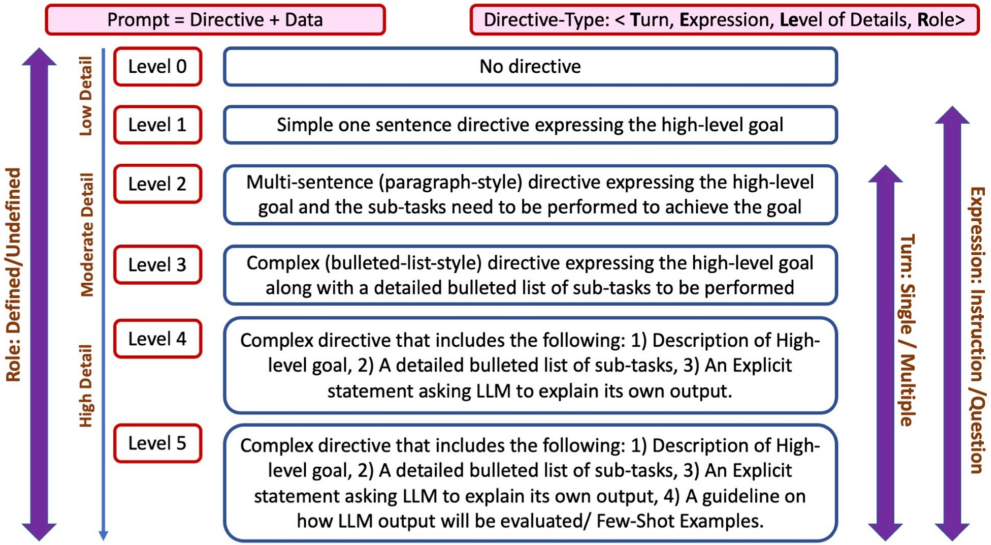

Better than lists “10 perfect prompts for…” because there is no such “perfect prompt”

Develop your own working methodology and improve by committing mistakes.

# Summarizing, Inferring, Transforming, Expanding



# The 6 levels of prompt engineering




Source: https://arxiv.org/pdf/2305.11430.pdf