

# Prompting

Chat assistants based on large language models (LLMs) require *prompts*, text inputs that describe what you want the model to do & how to do it. The prompts you use directly affect the quality of the results you get.



## Well known chat assistants

OpenAI	Microsoft	GitHub	Google	Anthropic
<b>ChatGPT</b>	<b>Copilot</b>	<b>Copilot</b>	<b>Gemini</b>	<b>Claude</b>
GPT	GPT	Codex	Gemini	Claude

*owner* (arrow from Google to Gemini)  
*LLM* (arrow from Claude to Claude)

## Know the limits of chat assistants

- Not a knowledge base. Always out of date.
- Not skilled at logical reasoning or mathematics.
- Chatbots are uncannily eloquent & convincing.

## What kind of tasks can you give a chat assistant?

higher risk of hallucination !

### TRANSFORM

Language translation  
Grammar & spelling  
Paraphrasing  
Style transfer  
Syntactic reformatting

### SUMMARIZE

Document summaries  
Topic summaries  
Code simplification

### ANALYZE

Information extraction  
Keyword extraction  
Part-of-speech tagging  
Sentiment analysis  
Text classification

### EXPAND

Text generation  
Brainstorming  
Concept explanation  
Code suggestion

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- Start simple, then iterate and experiment.
- Put clear instructions at the beginning or end.
- Make clear what is prompt and what is data.
- Favour positive ('do') over negative ('do not').
- Give examples or formatting instructions.

- Avoid leading questions.
- Never share personal or confidential info or data.
- Be critical of the responses you get.
- Check any facts the model produces.
- Be open about AI's influence on your work.

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## Some prompting templates



Start with a temperature of 0

### FEW SHOT

Q: {{EXAMPLE Q ONE}}  
A: {{EXAMPLE A ONE}}  
  
Q: {{EXAMPLE Q TWO}}  
A: {{EXAMPLE A TWO}}  
  
Q: {{QUESTION}}  
A:

### CHAIN OF THOUGHT

Answer the following question:  
  
{{QUESTION}}  
  
Let's think step by step. Explain your reasoning.

### ROLE PLAY

You are a professional, patient, careful data scientist with a lot of experience. Explain {{TOPIC}} to me at the level of an undergraduate in a STEM subject. Use real-world examples.

### COMPARISON

Make a Markdown table comparing {{THING A}} with {{THING B}}. Include no more than 10 attributes, focusing on important ones, and those that help differentiate the items.

Still not getting what you want? Try increasing the **temperature** a bit



**Be responsible with AI. Check facts and sources. Check for inappropriate output. Be clear about contributions.**