ChatGPT Prompt engineering for developers (DeepLearning.ai)

Using openAI locally:

To install the OpenAI Python library:
!pip install openai

The library needs to be configured with your account's secret key, which is available on the website.

You can either set it as the `OPENAI_API_KEY` environment variable before using the library:

!export OPENAI_API_KEY='sk-...'

Or, set `openai.api_key` to its value:

import openai
openai.api_key = "sk-..."

Few general tactics to give the model CLEAR AND SPECIFIC INSTRUCTIONS

1. Use delimiters to specify what the text area to work with is.
2. Ask for a structured output, say an HTML or a JSON
3. Ask the model to check if some assumptions are satisfied, then do if - else.
4. Few shot prompting: providing successful executions of task before asking the model to work on a task.

Giving model time to think

1. Specify the steps required to complete the task.
2. Ask for the output in a specified format
3. Instruct the model to work it out its own solutions before rushing to a conclusion.

" Your task is to determine if the student's solution \

is correct or not.
To solve the problem do the following:
- First, work out your own solution to the problem.
- Then compare your solution to the student's solution \
and evaluate if the student's solution is correct or not.
Don't decide if the student's solution is correct until
you have done the problem yourself."

Model Limitations

This is because the model doesn't understand the boundaries of its knowledge very well. It can make statements that sound plausible but are not true. To reduce the chances of hallucinations, ask the model to first find some relevant information and then answer based on the relevant information found.

Iterative Prompt Development

Very rarely are the first prompts used in real life development processes. We learn to iteratively refine our prompt based on the output provided by the LLM. We do it by analyzing why the prompt did not give the desired output and then refining our idea and prompt again.

Common issues:

1. The text is too long: We need to limit the number of words/ sentences/ characters. What we can add to the prompt is : " Use at most 50 words." / "Use atmost 4 sentences."
2. The text focuses on the wrong details, say we want it to focus more on the technical details, : " The description is intended for <xyz> so should be technical in nature and focus on <xyz>."
3. To extract information and display it in a table. Promp can be :" After the description, include a table that gives the product's dimensions. The table should have two columns. In the first column include the name of the dimension. In the second column include the measurements in inches only. Give the table the title 'Product Dimensions'. Format everything as HTML that can be used in a website. Place the description in a element. "

Summarizing Text

1. Summarizing with a word limit: Your task is to generate a short summary of < xyz >. Summarize the review below in utmost < xyz > words.
2. Summarizing with specific focus on something(say shipping): Your task is to give a short summary of < xyz > to give feedback to the shipping department. Do it in < xyz > words, focusing on aspects that mention shipping and delivery of the product. “

Summaries include topics that are not related to the topic of focus, try using “extract” instead of summarize.

To work with multiple texts at a time, label them review_1, review_2, etc. Add them in a reviews array and and then give the command

Inferring

Taking an input and performing some kind of analysis with it. This could be extracting labels, names, understanding the sentiment of the texts, etc.

Sentiment: “ What is the sentiment of the following text/review.”

Emotions: “ Identify the list of emotions the writer was expressing. Include no more than 5 items in the text.”

Single emotions: “ Is this review expressing anger.”

List of products: Identify the following items from the review:
- Item purchased by the reviewer
- COmpany that made these items

List of topics being discussed: “ Infer 5 topics that are being discussed in the following text. Make each item one or two words long, include no more than 5 items”

Determining if some items are topics in the following reviews: “ Determine whether each item in the following list of \
topics is a topic in the text below, which
is delimited with triple backticks.

Give your answer as a list with 0 or 1 for each topic.”

Transferring

LLMs are very good at taking some input and transforming it into some form on needed output.

1. Translating text to a different language (formal and informal)
2. Asking which language the text is in
3. Tone transformations, converting an informal “come check out this event” into a business letter
4. Converting JSON to dictionary and so on.
5. Grammatical errors and sepellchecks, “ Proofread the following texts and rewrite the corrected version.” Can add certain citation styles, to target readers of specific segments, etc.

Expanding

Taking in small amounts of data and generate large amounts of data.

1. Using reviews of customers for products to send personalized emails. If it is positive / neutral, thank the customer. If it is a negative review, apologise and ask to reach out to the customer service. (increased temp to get a more personalized email response)

Temperature: Degree of randomness of the model. When the temperature is 0, it always chooses the highest probable outcome. When the temperature increases, it chooses a lesser likely prompt to fill in the blanks.

Temperature = 0, reliable and predictable systems
Temperature = higher than 0, for increased randomness in responses

CHATBOT

System is like an high level instruction for the assistant(our chatGPT responses). It sets the personality of the responses we receive, guiding chatGTPT to respond to the text the way it does