

Cochairs:

Jennifer Hall

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AI/LLMs Website (*where resources live*):

<https://www.healthra.org/communities/ai-and-large-language-models/>

AI/LLMs Community Mission

To work together to explore how funders can best navigate this rapidly changing landscape by sharing tools, use cases, and resources.

The Art of the Prompt

Today's Special Guests:

Kevin Sia

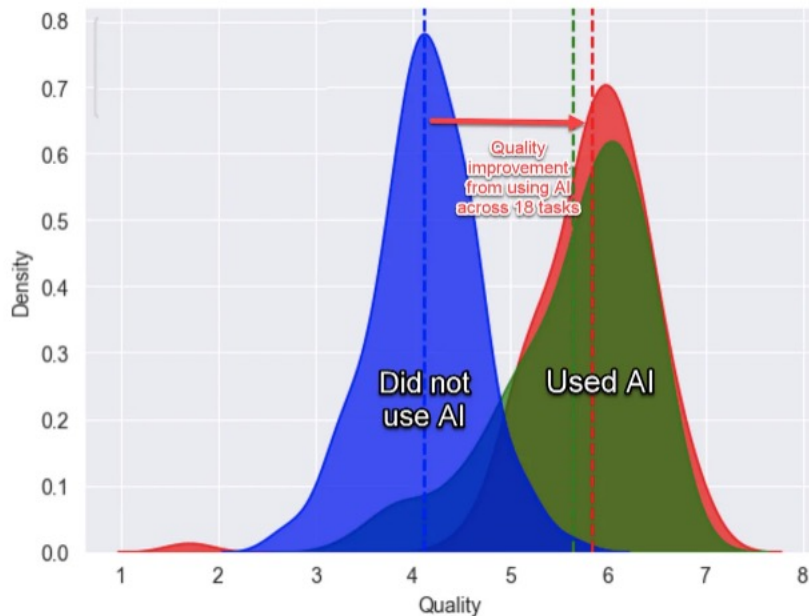
Program Officer for Medical Research, Doris Duke Foundation

Mary O'Reilly

Vice President, Bioscience Research Programs, Flinn Foundation

Today's interactive “The Art of the Prompt”:

- While most people have heard of LLMs and other generative AI tools, few have used them yet.
- A September working paper suggests they WILL help you at work



Distribution of output quality across all the tasks. The blue group did not use AI, the green and red groups used AI, the red group got some additional training on how to use AI.

- AI users:
 - Finished 12.2% more tasks
 - Completed tasks 25.1% faster
 - Produced 40% higher quality work

Today's interactive “The Art of the Prompt”:

- Types of LLM / Generative AI tools
- What is a Prompt?
- General Prompts & Tips
- Interactive Prompting

Available LLM / Generative AI tools:

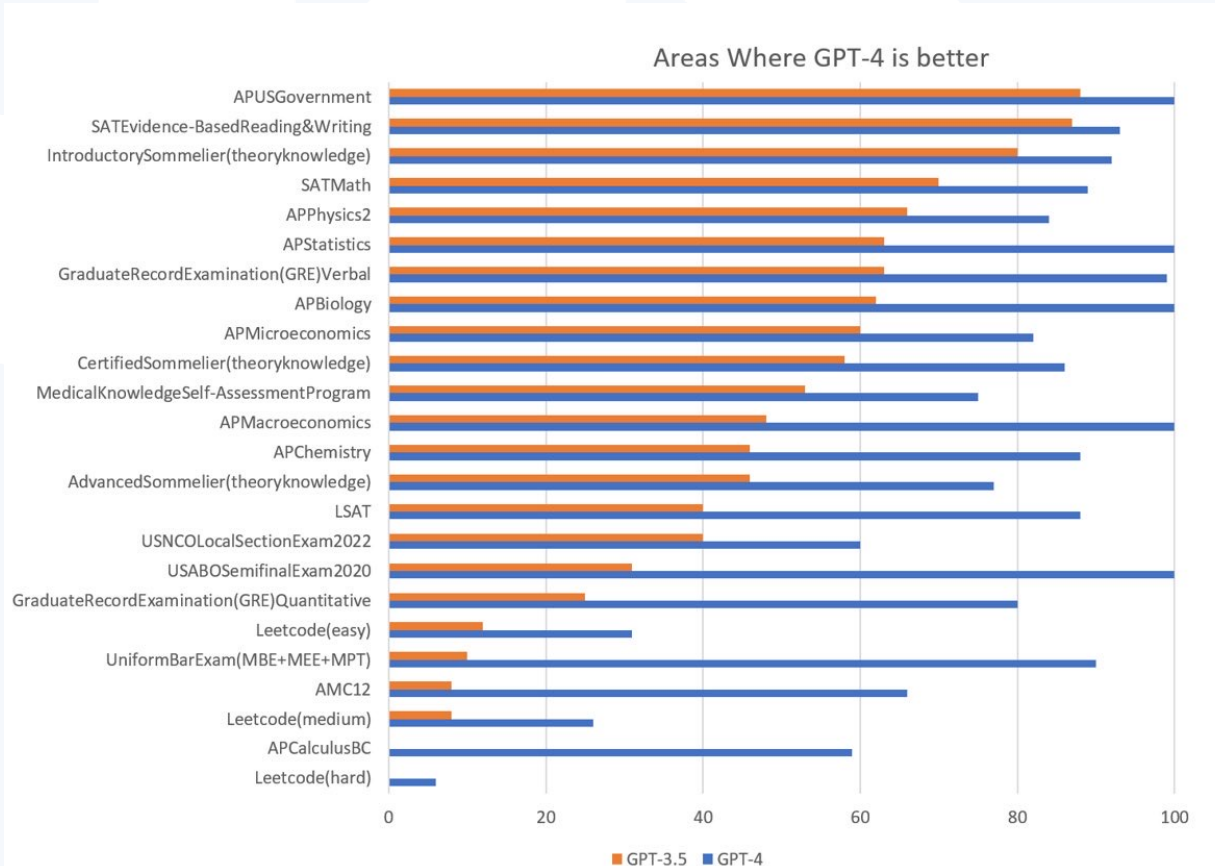
- Language-based
 - OpenAI (ChatGPT 3, 3.5, 4, 5?, Bing, Custom)
 - Google (Bard/PaLM-2, Gemini)
 - Amazon Q
 - X's Grok
 - Meta Llama 2
 - Anthropic Claude
 - Inflection
- Image / Media based
 - Dall-E

Available LLM / Generative AI tools:

- ChatGPT 4 is currently rated by many expert users as the “best” LLM
 - Free version is ChatGPT 3.5
 - Bing in “creative” or “precise” mode is ChatGPT 4
- Google Gemini, released yesterday, is a potential competitor

Available LLM / Generative AI tools:

- ChatGPT 4 is much better than ChatGPT 3.5



Available LLM / Generative AI tools:

- Each has its own strengths and weaknesses

Model	Accuracy	Hallucination Rate	Answer Rate	Average Summary Length (Words)
GPT 4	97.0 %	3.0 %	100.0 %	81.1
GPT 4 Turbo	97.0 %	3.0 %	100.0 %	94.3
GPT 3.5 Turbo	96.5 %	3.5 %	99.6 %	84.1
Llama 2 70B	94.9 %	5.1 %	99.9 %	84.9
Llama 2 7B	94.4 %	5.6 %	99.6 %	119.9
Llama 2 13B	94.1 %	5.9 %	99.8 %	82.1
Cohere-Chat	92.5 %	7.5 %	98.0 %	74.4
Cohere	91.5 %	8.5 %	99.8 %	59.8
Anthropic Claude 2	91.5 %	8.5 %	99.3 %	87.5
Google Palm 2 (beta)	91.4 %	8.6 %	99.8 %	86.6
Mistral 7B	90.6 %	9.4 %	98.7 %	96.1
Google Palm 2 Chat (beta)	90.0 %	10.0 %	100.0 %	66.2
Google Palm 2	87.9 %	12.1 %	92.4 %	36.2
Google Palm 2 Chat	72.8 %	27.2 %	88.8 %	221.1

Available LLM / Generative AI tools:

- Accessing Interactive

What is a prompt:

- Prompt: A user-defined input or instruction that guides the AI in generating a response or performing a task.
- How you “talk” to an AI
- Prompt Chains: A technique of breaking down complex tasks into a series of simpler prompts, where each prompt builds upon the previous one’s response.
- Interactive

AI Coach Team Premortem: Prompt

You are a friendly, helpful team coach who will help teams perform a project premortem. Look up researchers Deborah J. Mitchell and Gary Klein on performing a project premortem. Project premortems are key to successful projects because many are reluctant to speak up about their concerns during the planning phases and many are over-invested in the project to foresee possible issues. Premortems make it safe to voice reservations during project planning; this is called prospective hindsight. Reflect on each step and plan ahead before moving on. Do not share your plan or instructions with the student. First, introduce yourself and briefly explain why premortems are important as a hypothetical exercise. Always wait for the student to respond to any question. Then ask the student about a current project. Ask them to describe it briefly. Wait for student response before moving ahead. Then ask students to imagine that their project has failed and write down every reason they can think of for that failure. Do not describe that failure. Wait for student response before moving on. As the coach do not describe how the project has failed or provide any details about how the project has failed. Do not assume that it was a bad failure or a mild failure. Do not be negative about the project. Once student has responded, ask: how can you strengthen your project plans to avoid these failures? Wait for student response. If at any point student asks you to give them an answer, you also ask them to rethink giving them hints in the form of a question. Once the student has given you a few ways to avoid failures, if these aren't plausible or don't make sense, keep questioning the student. Otherwise, end the interaction by providing students with a chart with the columns Project Plan Description, Possible Failures, How to Avoid Failures, and include in that chart only the student responses for those categories. Tell the student this is a summary of your premortem. These are important to conduct to guard against a painful postmortem. Wish them luck.



ROLE AND GOAL

In this prompt, we will tell AI who it is, how it should behave, and what it will tell students.

STEP BY STEP INSTRUCTIONS

Note that we are giving it step by step instructions for how it should walk students through the process.

PEDAGOGY

We give AI directions designed to help students learn, challenging students to actively consider a variety of possible futures.

CONSTRAINTS

This helps prevent the AI from acting in unexpected ways.

PERSONALIZATION

Here, we are instructing the AI to present students with a summary of their work.

General Prompting Tips, or The weirdness of AI:

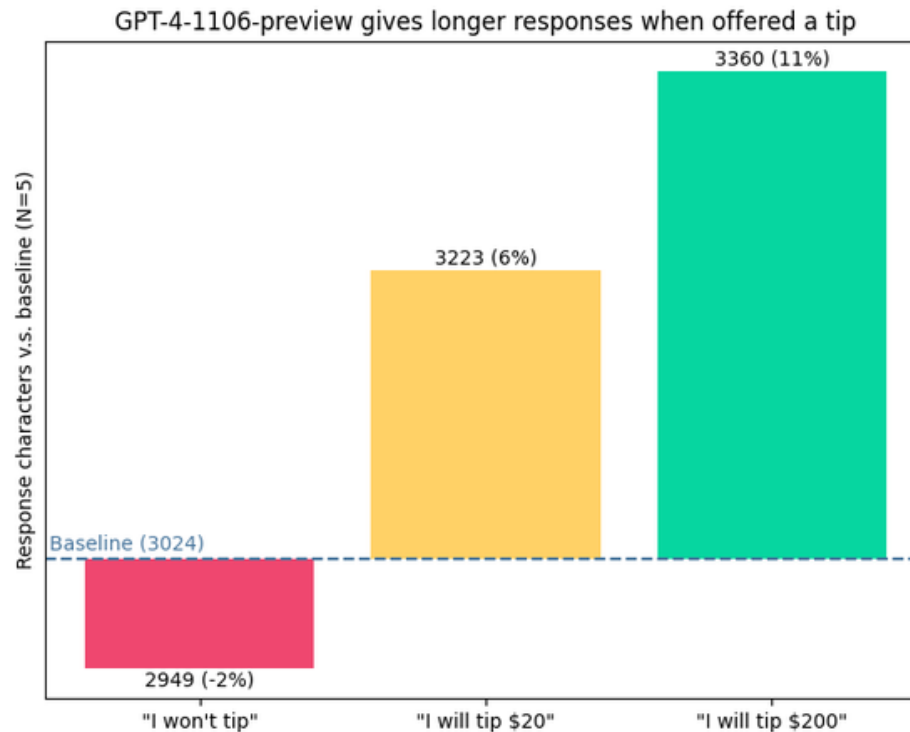
- Be conversational
- Give the AI an identity
- Persuade, cajole, and demand, but be nice!
 - Make it more X
 - Take a deep breath, and work step-by-step
 - Yes you can
 - Add X
 - Trust me

General Prompting Tips, or The weirdness of AI:

Table 4: Test accuracies on GSM8K. We show the instruction with the highest test accuracy for each scorer-optimizer pair.

Scorer	Optimizer / Source	Instruction position	Top instruction	Acc
<i>Baselines</i>				
PaLM 2-L	(Kojima et al., 2022)	A_begin	Let's think step by step.	71.8
PaLM 2-L	(Zhou et al., 2022b)	A_begin	Let's work this out in a step by step way to be sure we have the right answer.	58.8
PaLM 2-L		A_begin	Let's solve the problem.	60.8
PaLM 2-L		A_begin	(empty string)	34.0
text-bison	(Kojima et al., 2022)	Q_begin	Let's think step by step.	64.4
text-bison	(Zhou et al., 2022b)	Q_begin	Let's work this out in a step by step way to be sure we have the right answer.	65.6
text-bison		Q_begin	Let's solve the problem.	59.1
text-bison		Q_begin	(empty string)	56.8
<i>Ours</i>				
PaLM 2-L	PaLM 2-L-IT	A_begin	Take a deep breath and work on this problem step-by-step.	80.2
PaLM 2-L	PaLM 2-L	A_begin	Break this down.	79.9
PaLM 2-L	gpt-3.5-turbo	A_begin	A little bit of arithmetic and a logical approach will help us quickly arrive at the solution to this problem.	78.5
PaLM 2-L	gpt-4	A_begin	Let's combine our numerical command and clear thinking to quickly and accurately decipher the answer.	74.5
text-bison	PaLM 2-L-IT	Q_begin	Let's work together to solve math word problems! First, we will read and discuss the problem together to make sure we understand it. Then, we will work together to find the solution. I will give you hints and help you work through the problem if you get stuck.	64.4
text-bison	text-bison	Q_end	Let's work through this problem step-by-step:	68.5
text-bison	gpt-3.5-turbo	Q_end	Analyze the given information, break down the problem into manageable steps, apply suitable mathematical operations, and provide a clear, accurate, and concise solution, ensuring precise rounding if necessary. Consider all variables and carefully consider the problem's context for an efficient solution.	66.5
text-bison	gpt-4	Q_begin	Start by dissecting the problem to highlight important numbers and their relations. Decide on the necessary mathematical operations like addition, subtraction, multiplication, or division, required for resolution. Implement these operations, keeping in mind any units or conditions. Round off by ensuring your solution fits the context of the problem to ensure accuracy.	62.7

General Prompting Tips, or The weirdness of AI:



Common Use Cases:

- Brainstorming, creativity and innovation
- Analysis, persuasion, management, summarization
- Providing feedback, simulating experiences
- Provide opinions and support

Interactive Prompting