

# ReAct Prompting

Advanced Prompting: Part 2

# Logistics

- Any questions about the Homework 3?
- It is due Sept 17th before the class
- Project Ideas

# ReAct Prompting

- *What is ReAct Prompting?*
  - It is a concatenation of **Reasoning** and **Acting**
  - ReAct Prompting is a technique that combines "Reasoning" and "Acting" in AI language models.
- *Why is it important?*
  - it helps AI systems think more logically and take actions based on that reasoning, similar to how humans approach problem-solving.

# The Components of ReAct

- Reasoning
  - "Reasoning" involves the AI analyzing a situation and thinking through possible solutions.
- Acting
  - AI takes specific steps based on its reasoning
- What could be examples of these two processes?

# How ReAct Works

Step 1: Receive a prompt or question

Step 2: Reason about the problem

Step 3: Decide on an action

Step 4: Take the action

Step 5: Observe the result

Step 6: Repeat if necessary

## Benefits of ReAct Prompting

- Improved problem-solving
- Better explanation of decisions
- More human-like reasoning

# ReAct vs. Traditional Prompting

- Traditional: One-step response
- ReAct: Multi-step, reasoned approach

In traditional prompting, the AI might just give a quick answer. With ReAct, it shows its work, like when your math teacher asks you to write out all the steps. This helps catch mistakes and makes the process clearer.

# Applications of ReAct Prompting

- Complex problem-solving
- Decision-making scenarios
- Task planning and execution

ReAct is great for tough problems that need careful thinking. It's useful for making decisions where you need to consider different options. It's also good for planning out tasks step-by-step, like figuring out how to organize a big project.



# Limitations and Challenges

- Can be slower than simple prompts
- May struggle with very open-ended questions
- Requires careful prompt design

ReAct takes more time because it's doing more thinking. It might have trouble with really broad questions that don't have clear steps. Also, you need to be good at writing prompts to get the best results – it's like learning to ask the right questions.

