Task Supportive and Personalized Human-Large Language Model Interaction:

A User Study

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1 Background

- ChatGPT's release has generated significant interest in **human-AI interaction**.
- Various purposes rise: **task assistance, entertainment, education, search engine alternative**.

2 Unsolved Problems

- Users have challenges in **initializing and refining prompts**
- Users have **cognitive barriers** and **biased perceptions** in the usefulness of ChatGPT's output and the task completion

3 This work investigate:

how **background information**

- Task topic and type

and user cognitive aspects

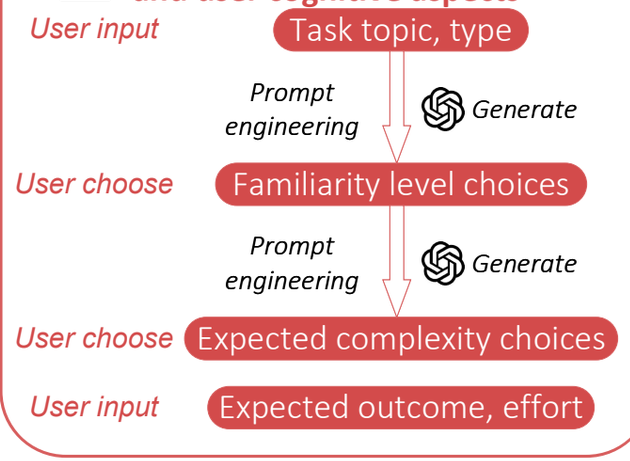
- Task familiarity
- Expectations of task complexity, outcomes, and effort)

affect user interactions in information-seeking and problem-solving tasks with LLMs.

4 Participants

College students in diverse background: Computer Science, Library and Information Science, Education, Psychology, Health ...

5 Collecting task information and user cognitive aspects



6

Users conduct their own tasks using ChatGPT with suggestions:

How can ChatGPT help you perform the task by

initializing the conversation, or predicting your next question, or revising your prompt, or adapting its answer…

Prompt engineering

7 Evaluation

Prompt/output annotation

- Usefulness, credibility, ...

Post-task questionnaire

- Satisfaction, challenges, ...

Interview

8 Future work

- User modeling with behavioral data only
- Dynamic task status at the prompt level
- RLHF involving task information and user cognitive aspects
- How does Auto(Task)GPT help users?

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