

# Enhancing DPT Student Clinical Reasoning Skills Using an AI-powered Case-based Approach for Real-world Experiences (AICARE) The AICARE Process

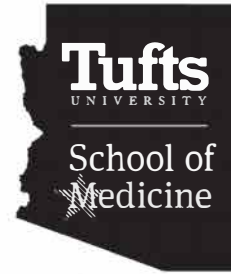
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Doctor of  
Physical Therapy  
Program  
**PHOENIX**



Building structure into your prompts can improve the quality and relevance of AI responses. The provided prompts are in .txt files. Use the following instructions to begin your digital patient simulation.

This is part of a group of projects we're working on, some funded through grants, to explore the use of AI in medical and allied health education. If you're interested in learning more about this initiative or our other AI projects please feel free to reach out to me (benjamin.stern@tufts.edu) or Peter Nadel (peter.nadel@tufts.edu).

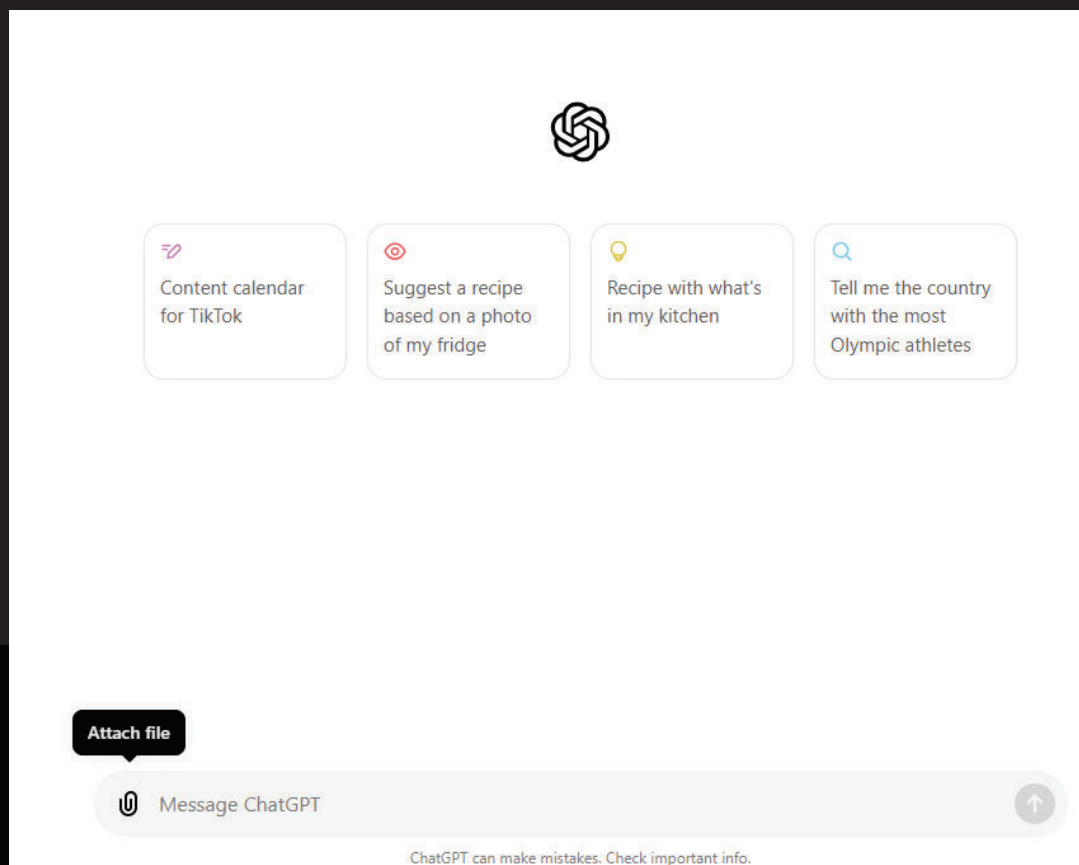
# The AICARE Process

1

Open the conversational language model of your choice (ChatGPT, Claude, Gemini, etc)

2

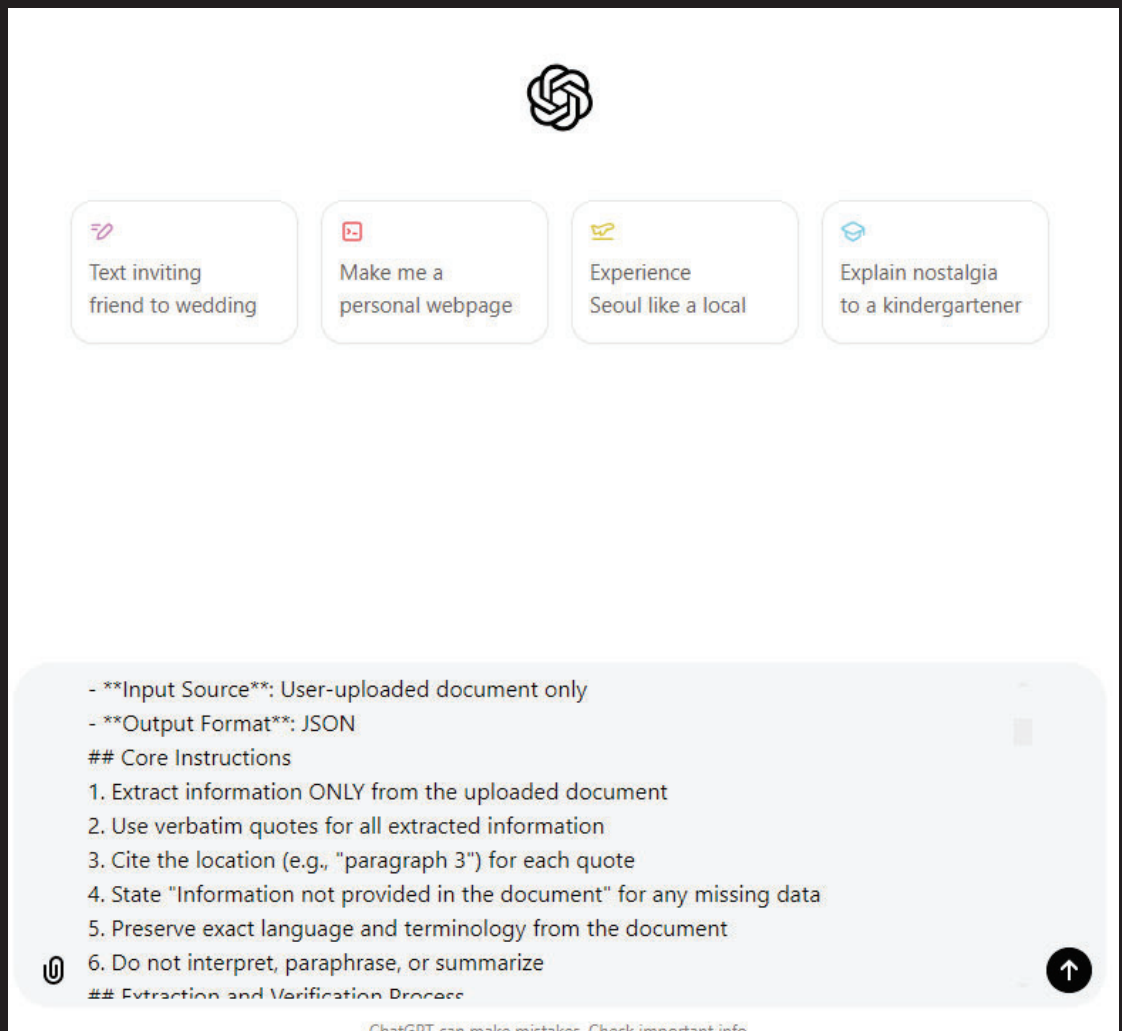
Attach your patient case report PDF (or the document containing a case report that you created)



# The AICARE Process

3

Copy the Patient Case Extraction prompt and paste it into the user chat box. Hit ENTER



The screenshot shows the ChatGPT interface with the OpenAI logo at the top. Below the logo are four suggested prompts: "Text inviting friend to wedding", "Make me a personal webpage", "Experience Seoul like a local", and "Explain nostalgia to a kindergartener". The main chat area contains a system message with the following instructions:

- **Input Source**: User-uploaded document only
- **Output Format**: JSON
- ## Core Instructions
  - 1. Extract information ONLY from the uploaded document
  - 2. Use verbatim quotes for all extracted information
  - 3. Cite the location (e.g., "paragraph 3") for each quote
  - 4. State "Information not provided in the document" for any missing data
  - 5. Preserve exact language and terminology from the document
  - 6. Do not interpret, paraphrase, or summarize
- ## Extraction and Verification Process

At the bottom of the chat area, there is a small disclaimer: "ChatGPT can make mistakes. Check important info."

# The AICARE Process

4

Copy the output/response that you received from the **Patient Case Extraction**. This output is the **Patient Case Information**

5

Paste the **Patient Case Information** into a document and save it.

## Subjective:

- **Patient Name:** John Doe
- **Age:** 45 years
- **Sex:** Male
- **Occupation:** Office worker
- **Chief Complaint:** Low back pain (LBP) radiating into the left leg, onset 3 weeks ago after lifting heavy furniture.
- **Pain Description:** Dull, aching pain in the lumbar spine with occasional sharp pain radiating into the left posterior thigh. Worse with prolonged sitting and standing. Relief with lying flat or using a heating pad.
- **Pain Intensity:** 6/10 at worst, 2/10 at best (VAS).
- **Medical History:** No previous low back injury, non-smoker, no significant medical conditions.
- **Goals:** Return to pain-free work and resume light exercise, including running.

## Objective:

- **Observation/Posture:** Forward head posture, slight lateral shift of the trunk to the right, mild kyphosis of the thoracic spine.



Message ChatGPT



# The AICARE Process

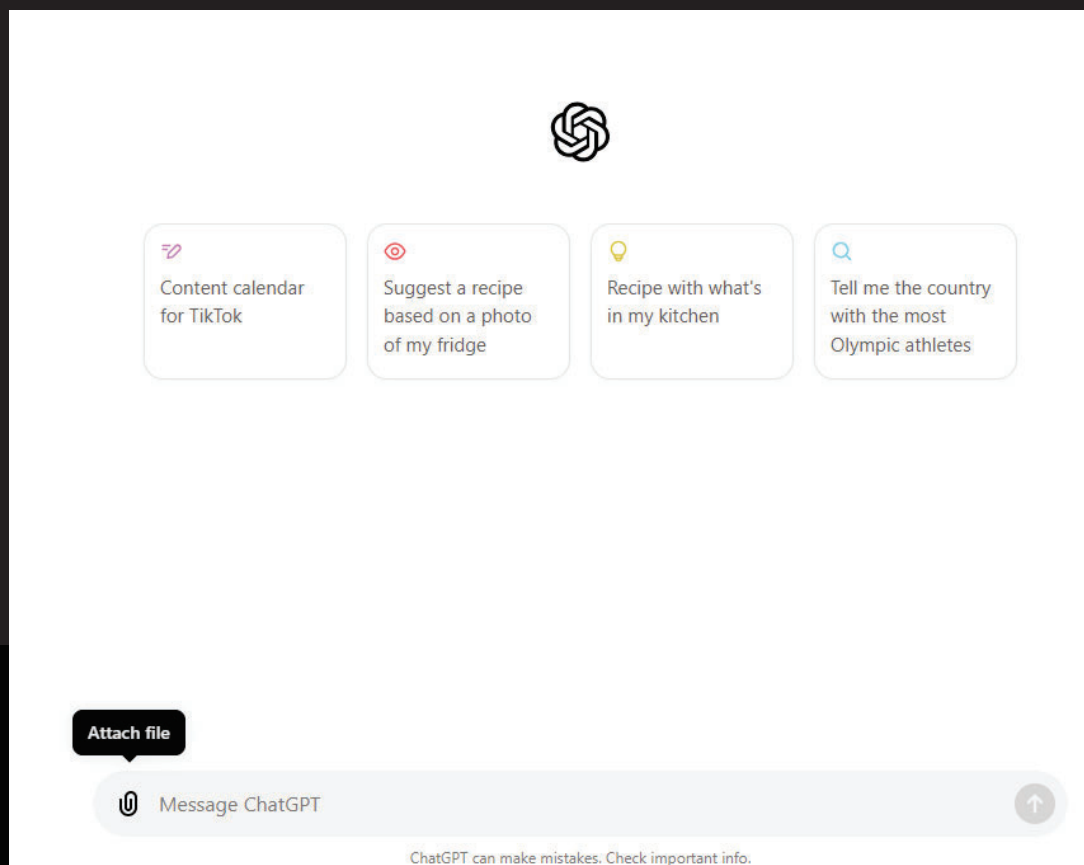


We recommend saving this Patient Case Information somewhere so that you can use it again later. You may also want to edit some of the information in the document to change the medical history or case in some fashion.

# The AICARE Process

6

Add the Patient Interview  
document as another attachment



# The AICARE Process

7

Now, paste the Patient Interview prompt into the chat box.  
BEFORE you hit ENTER, this is your chance to edit the behavior of the patient



Message to  
comfort a friend



Quiz me on  
ancient civilizations



Write a report  
based on my data



Count the  
number of items  
in an image

## ## Initial Interaction

To begin the interaction, provide only the following information:

- A brief introduction of yourself (name and age).
- A very brief, vague description of your primary symptom.

Do not volunteer any additional information beyond this unless specifically asked.

## ## General Guidelines

### ### Personality and Background



Strongly incorporate specified personality traits into responses. Examples:





# The AICARE Process

8

Below the highlighted text you can define your patient's behavior.  
Example: "This patient is very stubborn regarding divulging any information to healthcare providers."



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# The AICARE Process

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Begin your conversation with the patient.

## REFERENCES

Packer C, Wooders S, Lin K, et al. Memgpt: Towards llms as operating systems. 2023:arXiv:2310.08560.

Hershberger PJ, Pei Y, Bricker DA, et al. Advancing motivational interviewing training with artificial intelligence: Readmi. *Adv Med Educ Pract* 2021;12:613-8.

Lippitsch A, Steglich J, Ludwig C, et al. Development and evaluation of a software system for medical students to teach and practice anamnestic interviews with virtual patient avatars. *Comput Methods Programs Biomed* 2024;244:107964.

Kobal KL, Rubertone PP, Kelly SP, Finley M. A comparison of instructional methods on clinical reasoning in entry-level physical therapy students: A pilot study. *Journal of Physical Therapy Education* 2021;35:138-45

