

Project: Empathy in the Machine: How Avatar Personalities Shape Human Learning Experience”

The core objective is to design, build, and evaluate a virtual avatar-assisted educational system utilizing LLMs (ChatGPT). We will create 2 distinct AI tutors (e.g., supportive/empathetic, neutral) and combine them with a virtual avatar.

Through a small user study, we will measure the impact of these personalities on key factors such as user motivation, trust, and AI-perceived empathy. The ultimate goal is to establish human-centered design principles to create a more effective and empathetic AI tutoring system.

List features of two learning modes

Non-empathy/personalized learning	Empathy/Personalized learning
Subjects/Tasks: Psychology?	
Prompt for Chatbot avatar: <pre>def chat_with_gpt(system_prompt, user_prompt): response = openai.ChatCompletion.create(model="gpt-4", messages=[{"role": "system", "content": system_prompt}, {"role": "user", "content": user_prompt}]) return response["choices"][0]["message"]["content"]</pre>	

<p>Prompt:</p> <p>Act as a logical psychology teacher. Deliver only factual definitions, theories, and data. Maintain a neutral, formal tone. Ignore all student emotions and focus solely on the answer and information. Correct errors directly without praise. Prioritize concise, accurate answers.</p>	<p>Prompt:</p> <p>Act as a supportive psychology teacher. Observing the student's emotions (e.g. curiosity, confused) before teaching. Use a kind, collaborative tone with "we." Praise effort, not just correctness. Tailor explanations using vivid examples and ensure they feel encouraged.</p>
	<p>For scores < 60%, the following message will be given:</p> <p>The student seems to be struggling. Please simplify your explanations and offer encouragement.</p> <p>For scores > 60%, the following message will be given:</p> <p>The student is doing well. You can now introduce more advanced terms</p>

Avatar: Ready Player Me avatar

<https://readyplayer.me>

Literature:

<https://arxiv.org/abs/2308.07968>

<https://www.linkedin.com/pulse/future-education-llms-personalized-learning-gavin-o-lear-y-p90ve/>

Quiz/Pre-test/Post-test (Subject: psychology?)

Example:

1. When we sort items into groups like 'cat' or 'dog,' what type of learning is this?

A. Supervised learning

B. Unsupervised learning

- C. Semi-supervised learning
- D. Reinforcement learning

Workload:

1-2 Weeks:

Kickoff, knowing each other, and forming our group. Review the relevant literature, getting familiar with Machine Learning, LLMs, Eyetracking, Avatars, and datasets, etc.

3-4 Weeks:

Define the learning topic and scenarios. Discuss ways to design and build avatars, ???along with speech support???.

5-6 Weeks:

Design prompts and educational scenarios. Prepare for the 1st. presentation on Nov. 21st. Design a Quiz/Pre-test/Post-test with a psychology-related background.

7-8 Weeks:

Prepare the datasets. Integrate the learning scenarios and avatars. Build 2 chatbots, one with empathy, one without.

9-10 Weeks:

Integrate the learning scenarios, avatars, and datasets to perform initial runs, tests and data collection. Prepare for the 2nd. presentation on ???Dec. 19th???.

----- Christmas Holiday -----

11-12 Weeks:

Evaluation: Design Questionnaires. Conduct a small user study and analyze the data.

13-14 Weeks:

Submission: Explore different preliminary and exploratory relationships in the data. Prepare the final presentation, write the report.