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Mental Wellness Companion for Students using AIML

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Abstract: ***Now a days students are struggling with mental health. Between strict classes, tough competition, it's a lot. But when the need the help, many students are can't asking for it, sometimes because of the stigma, ego, or sometime it's not easy to reach out. And that's why this research comes in. And the idea is using pepper, means the robot that from soft bank robotics, as kind of mental wellness companion on the campus. It is not just a robot it will use ai tools like natural language processing (NPL). It's actually talk with students, understand their facial expression for sense how they are feeling, and listen their changes in their voice that might mean they're sad or upset.***

Keywords: Student Well-being, Artificial Intelligence (AI), Machine Learning (ML), Social Robots, Emotion Recognition, Conversational Agents, Stress Detection, Depression & Anxiety Support.

1. Introduction

Now the days college students are feeling so stressed out. Struggling heavy collage work, course work, worrying about the future, careers and many more. most of students comparing themselves to others, and dealing with their own expectations. It's a big deal for them, and sure, most campuses are offering counselling, but lot of students just don't go. That's why the social robots like pepper come in. they can chat with students and pick up on the basic emotions, it's not only for students by the way, it's for all the peoples. Which actually make feels like they are useful, pretty in their life and places where students need some extra support.

2. Literature Review

In the year of 2020, the researchers found that social robots are helped patients to get more involved, but they mostly worked with older adults. and in the next year, the people are chatbot therapy using the ai for the mind anxiety, and next year of 2022, fast forward of computer vision for the picking up emotions, looked promising in the terms of accuracy, and in the year of 2023 the robot assisted counselling got some encouraging feedback, and they didn't have many people in the study. next in the 2024, the ai mental health apps are powered by turned into super easy to access, but they're still long way from the human's feelings. So, in the all things we need more realistic trials and better results, for robot and human ways for the communicate, if we want these tools are connect with the people and understand them.

3. Methodology

This research takes a hands-on approach: this ai chatbot are designed to help students with their studies and some basic emotional support. First of all, the team sketched out how the chatbot should work, and next got to work developing it. If once this prototype was run up, then the real students tried it out, and their interaction was giving team plenty to analyse. And once it gives the best results. it will be able and good.

3.1 Dataset Preparation

We are put them together dataset filled with real student's statements and questions about the mental wellness, and we got at most of things like stress about the academic, for exams, losings interest in study, zero motivation and emotionally sad for all this. The we got around 60 to 70 example entries, and it is an enough to capture that what students exactly go through. And mostly you'll find the most example like stressing and sad before the test and big exams.

3.2 Experimental Procedure

In the experimental phase, we put the ai based mental wellness companion to the test with a set of real student's questions, we used the bot like the ChatGPT or another similar ai language model, for connecting straight to the chatbot interface. For each student query, we tried different ways of the prompting for AI. And then we are looked at the responses, judging them on things like how clear, relevant, and helpful they were.

3.3 Evaluation Criteria

a) Accuracy- Here the system should give correct & the relevant responses to the students for mental wellness queries.
b) Response time- The chatbot should give quickly reply like within a few seconds.
c) Natural language understanding – The system should understand the difference ways of questions ask by students.
d) User satisfaction- Students should find the chatbot useful and helpful and easy to use.
e) Reliability- The system should run smoothly without errors or the crashes.
f) Privacy & security- The student's data and the conversations should be kept secure and the confidential.

4. Results

Here, the experiment deals with about the 50 questions from

students, all the focused on the academic's pressure, stress and how they're feeling sad or emotionally. For each question, they are trying out three different ways to prompt the AI like zero shot, role based and chain of thought. And once the AI comes up with answers, the people are rating each response for how accurate and clear it is. And then, they put all the results into the table, to see which prompting style actually helps students the most when it comes to the mental wellness support.

5. Future Scope

There is a lot of room to make this system better. Testing it with the biggest datasets and the tougher, and the more realistic for students' mental health cases will show what it can really handle. And top of the that, bringing in the stronger AI models and emotion detection, and one more point that is listening to what users say in real time, would make it a lot smarter and the more responsive. And honestly, putting the chatbot on the web just makes sense.

6. Conclusion

We can analyse that how many bunch of prompts an al mental wellness companion for the students. And it turns out that changing the prompt it doesn't make the answers more accurate, but it can change the ways for them and ai explain things and offers good help, when we are used many of thought and the role-based prompts, the bot will give guidance and felt clear and supportive .it gives always a positive response. Moral of the ends the tools like this can gives the basic and positive support for students.

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