Machine Learning Engineer

Goal:
Develop a POC for tracking Therapy Progress.

Background:
Mentalyc is a service that enables psychotherapists to automatically create documentation from recordings of sessions with their patients. We generate medical notes from the transcribed audio by assessing multiple aspects of the patient's state and populating the information into a predefined template, chosen from the options available in our library (e.g., SOAP note). The resulting note is in a structured data format (JSON) that contains key-value pairs in the form of *<parameter> : <assessment>*

For example:
"***Sleep***" : "The client suffers from irregular sleeping patterns and slight insomnia."

An explanation of the structure of the note and the meaning of the items is provided in the file "*note_template_explanation.txt*."

As the data from all sessions of a single patient is stored in the same structured template format, we can apply various methods to detect how a patient is progressing (or digressing, or plateauing) throughout the course of their therapy.

The progress of a client is assessed based on the symptoms the client presents. A reduction in the frequency or severity of the symptoms is a proxy for positive progress. For example, the client mentions in the first session, but then reports that he in the second session. This should be considered a positive development.

Task Objective:

Conceptualize and prototype:

1. a simple user interface that enables a therapist to submit two or more sessions for which an estimation of the progress is to be performed.
2. an AI approach to track the patient's progress between the two sessions.
3. documentation regarding the approach and the research process.

Submission Instruction
- The submission should be done via a **PRIVATE** repository with clear documentation and instructions on how to run the solution.
- **The invitation for access to the code repository should be sent to georgi@mentalyc.com and pandu@mentalyc.com.**
- You are free to choose the exact approach and implementation, as long as you can justify your reasoning behind it.

Approach Suggestions:
- Detecting and tracking symptoms can be done in various ways—possible approaches include RAG, multi-agent systems, or other classification methods.
- You can use the content of standardized psychotherapy tests as guidance (e.g., the GAD-7 and PHQ-9 assessments, which are industry standards for measuring progress in anxiety and depression, respectively).
- Feel free to write to **pandu@mentalyc.com or georgi@mentalyc.com** if you have any questions or need clarifications.

Example Data:
- The page contains two consecutive sessions for two different clients.
- A file explaining the information contained in each item of the note.

- note_template_explanation.txt
- client1_session1.txt
- client1_session2.txt
- client2_session1.txt
- client2_session2.txt

Click here for the link to the folder.

Example Scope of Work for a Multi-Agent Solution:
1. Design and implementation of one or more agents for different assessments (e.g., GAD-7, PHQ-9, etc.).
2. Development of a router for selecting the appropriate agent(s) based on the information contained in the session transcript or the final note.
3. Map the information to a score based on the assessment and determine the level of progress.
4. Integration of the solution with a user interface (FastAPI, Streamlit, etc.) so that the results can be visually reviewed by therapists.

Contact
If you have any questions, please contact us via this email pandu@mentalyc.com or schedule a 10-minute call here.

Submission

Kindly submit by filling out the form below:

———————————————————

Full name*

Your answer

Email*

Your answer

PRIVATE Github link*

Your answer

Implementation URL (Optional)

if applicable

Your answer

Role*

- ◯ Backend Engineer
- ◯ SEO
- ◯ DevOps
- ◯ Design System Engineer
- ◯ Machine Learning Engineer
- ◯ PM: Prompt Engineering
- ◯ Senior MLOps Engineer
- ◯ Frontend Engineer

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