MyTak Mid Submission

Mental Health Support Platform

This project presents a comprehensive web-based platform designed to support therapists in monitoring and analyzing patients' mental health through multimodal data inputs. The system integrates user-provided text inputs, audio recordings, and Spotify listening history to derive insights into patients' emotional states and potential mental health concerns. Key components of the platform include:

1. Text Analysis Pipeline

The text analysis pipeline utilizes natural language processing techniques to extract sentiment and identify specific mental health concerns from patient inputs. Key components include:

- Sentiment analysis using pre-trained models
- Named entity recognition for identifying specific concerns
- Classification of concerns into predefined mental health categories

2. Music Listening Behavior Analysis

The music analysis module processes Spotify listening history data to generate insights. This involves:

- Data extraction and cleaning from Spotify API
- Time series analysis to identify listening patterns
- Visualization of temporal shifts using libraries like Matplotlib or Plotly

3. Web-Based Therapeutic Interface

The web interface is built using modern web technologies to ensure responsiveness and user-friendliness. Key features include:

- Patient management dashboard for therapists
- Data visualization components for displaying insights
- Secure authentication and data storage

4. Integration and Intensity Score Calculation

The ongoing work on integration and intensity score calculation involves:

- Developing a unified data processing pipeline
- Implementing algorithms to calculate intensity scores based on multiple data sources
- Ensuring real-time updates and synchronization across modules---

Future Directions

In future development stages, the project aims to complete the integration of various modules and implement a reliable intensity score that reflects the severity of patients' expressed concerns. Additionally, improvements to integration of the modules are expected to allow real-time analysis and more accurate representations of patients' states. Expanding the categories for concern classification could also help provide a more complete picture of patients' mental health. This will enable therapists to access more comprehensive insights and help improve the accuracy and relevance of their assessments. Together, these improvements will contribute to a more effective, data-driven approach to mental health support.

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