

# Inner Me: An AI-Assisted Framework for Automated Psychotherapy Session Transcription, Emotion Analysis, and Summarization

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*Abstract- Psychotherapy sessions generate large volumes of unstructured conversational data that must be documented, analyzed, and reviewed by therapists. Manual transcription and subjective interpretation of emotional cues are time-consuming and cognitively demanding. This paper presents Inner Me, an AI-assisted framework designed to support psychotherapists through automated speech-to-text transcription, emotion recognition, session summarization, and interactive question–answering.*

**Keywords:** Artificial Intelligence, Psychotherapy, Speech-to-Text, Emotion Recognition, Natural Language Processing

## I. INTRODUCTION

The growing demand for mental health services has increased the workload of psychotherapists. Accurate records of therapy sessions are essential for continuity of care, progress tracking, and clinical decision-making. Inner Me automates transcription, emotion detection, and summarization to reduce therapist workload.

## II. RELATED WORK

Prior research explores mobile health technologies, affective computing, and NLP-based summarization. However, integrated systems specifically tailored for psychotherapy workflows remain limited.

## III. SYSTEM OVERVIEW

Inner Me processes recorded psychotherapy sessions and generates structured insights. Core components include audio preprocessing, transcription, emotion recognition, summarization, and question–answering.

## IV. METHODOLOGY

Speech-to-text is performed using deep learning ASR

APIs. Emotion recognition uses ML classifiers on acoustic features such as MFCCs and pitch. NLP techniques extract key themes for summarization.

## V. SYSTEM ARCHITECTURE

The system follows a pipeline architecture from audio input to insight delivery through a secure web interface.

## VI. IMPLEMENTATION

Python is used for backend processing, Streamlit for UI, and ML libraries like TensorFlow and PyTorch for analysis.

## VII. RESULTS AND DISCUSSION

The system improves documentation efficiency and provides consistent emotional insights, reducing therapist administrative burden.

## VIII. CONCLUSION

Inner Me demonstrates how AI can augment psychotherapy practice by automating routine tasks while preserving clinical judgment.