SenseAI

Your Digital Companion for Emotional Well-Being

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ABSTRACT

SenseAI is a multimodal AI-powered chatbot designed to offer emotional support by analyzing users' text, voice, facial expressions, and biometric data. It delivers real-time, personalized responses to help users manage their mental well-being using intelligent emotion recognition. It aims to close the gap in accessible, responsive mental health tools by offering a context-aware, human-like interaction experience for users under emotional stress.

INTRODUCTION

Modern individuals face sudden and complex emotional challenges but lack instant, personalized support tools. Existing solutions are often limited to single-modal inputs and lack real-time adaptability.

SenseAI uses various inputs to evaluate emotional states and respond empathetically. It integrates real-time processing with an emotion recognition feedback loop for sustained psychological support.

Built using Flutter and Node.js, and integrated with services like Firebase and Zepp Life, SenseAI combines NLP, computer vision, and emotion recognition to support mental well-being.

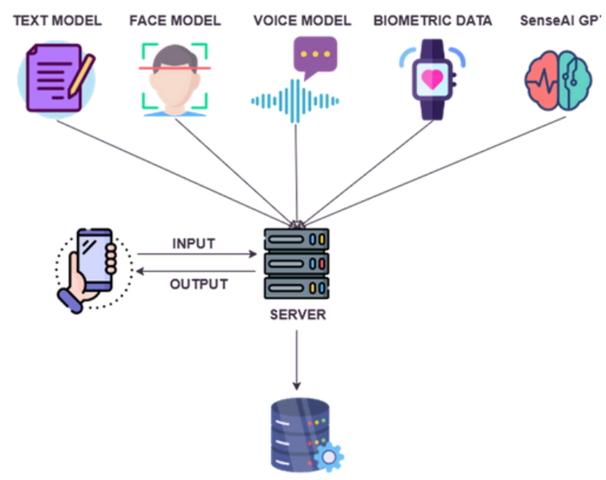
SOLUTION

SenseAI's core solution is based on an emotion-aware chatbot that utilizes NLP & GPT-based transformers for textual emotion and sentiment analysis, voice tone and pitch for affective cues, facial recognition for visual signals, and biometric integration to enhance emotional insight.

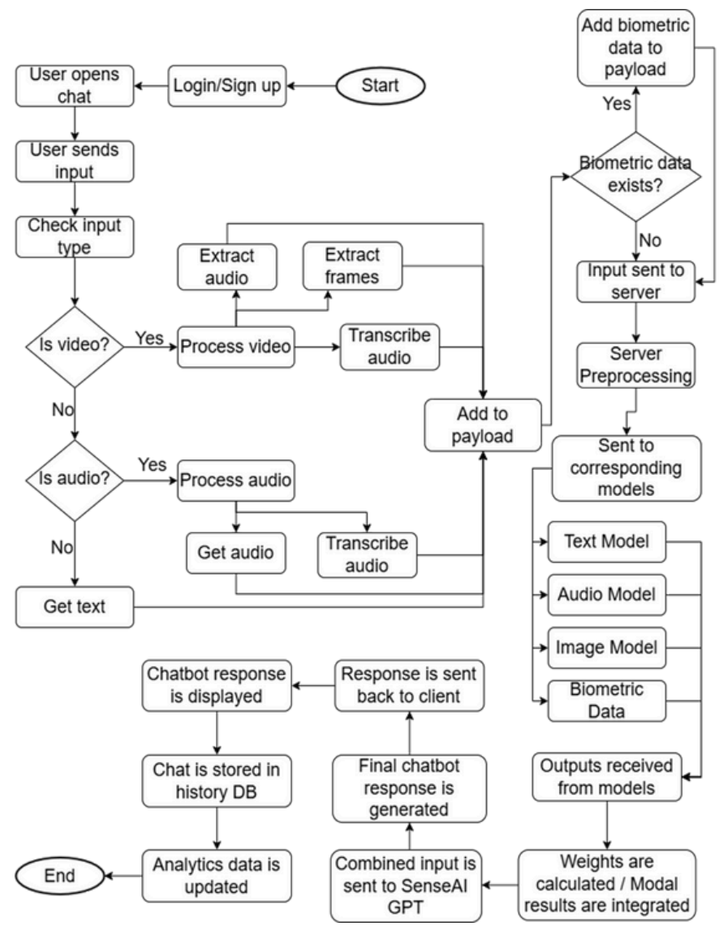
The chatbot fuses these data modalities through an internal decision algorithm that prioritizes more reliable cues. It adapts responses based on input combinations, ensuring personalization and empathy across various emotional contexts.

Each modality is assigned a weight based on its reliability and impact on emotional inference. These weights are used in the decision logic to fuse inputs and generate contextually appropriate responses.

SYSTEM ARCHITECTURE



FLOW CHART



COMPANY INFO

The target market includes individuals in need of instant emotional support, mental health organizations and institutions dedicated to emotional well-being.

TECHNOLIGIES

RESULT

We successfully developed a functional and scalable AI-based support system capable of interpreting users' emotional states through multiple data sources.

Throughout the project, we gained hands-on experience with emotion recognition, chatbot integration, and data fusion across multiple input types. We learned how combining AI models from different modalities improves emotional accuracy and user interaction. We saw that personalized responses improved user engagement in simulated use cases.

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