Virtual Reality (VR) Therapy for Anxiety and Stress

An immersive VR-based therapy platform for anxiety and stress management

Overview

Mental health challenges like anxiety and stress are increasingly common, yet therapy access remains limited due to stigma, cost, and availability. This project introduces a Virtual Reality (VR) therapy platform designed to help users manage anxiety and stress through immersive, guided environments and relaxation experiences — accessible through low-cost VR headsets or smartphones.

Problem Statement

Traditional therapy for anxiety and stress can be expensive, time-consuming, or inaccessible to those in remote or low-income regions. There is a strong need for a self-guided, affordable, and effective mental wellness tool that users can access from anywhere.

Solution

Our solution is a VR-based therapy application that uses immersive environments and guided sessions to promote relaxation, mindfulness, and emotional regulation. The platform offers calming environments, guided exercises, AI-based personalization, and progress tracking.

Key Features

• Immersive VR therapy sessions
• AI-powered session recommendations
• Real-time emotion and stress tracking
• Multi-language voice guidance
• Works on low-cost VR headsets and smartphones

Tech Stack

Frontend: HTML, CSS, JavaScript
VR Frameworks: WebXR, A-Frame, Three.js
Backend: Java (Spring Boot / Servlets)

Database: MySQL / Firebase
AI/ML: TensorFlow.js / Emotion Detection Models
Hosting: GitHub Pages, Firebase Hosting, or AWS

System Architecture

[User Headset/Phone] → [Web App (HTML, CSS, JS, A-Frame)] → [Backend Server (Java)] → [Database (MySQL/Firebase)] → [AI Module for Personalization]

How It Works

1. The user logs in and selects their mood or stress level.
2. The system recommends a VR therapy scene.
3. The user enters the immersive VR session.
4. After completion, the app tracks relaxation and offers feedback.

Impact

• Increases accessibility of therapy tools
• Reduces mental health stigma through gamified experiences
• Can be scaled to educational, workplace, and healthcare settings

Future Enhancements

• Add biometric stress tracking (via smartwatch integration)
• AI chatbot companion for real-time support
• Multiplayer group meditation rooms
• Offline session access

Team Members

• Jagdish Kumar – Frontend Developer & VR Designer
• ShivaRam – Backend Developer
• Snigdha sri – AI/ML Specialist
• Akanksha – UI/UX & Content Designer
• Mohitha (database & documentation)

References

• WebXR & A-Frame Documentation
• OpenAI & TensorFlow.js APIs
• Mindfulness-based therapy research papers

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