

PersonaBot

An interactive AI-powered mental wellness platform built by **Team Draco** for the "Personabot: AI-Driven User Profiling" problem statement at **ICTC 3.0**.

Key Features

Empathetic & Inquisitive Therapy Experience

Our AI model, with **10.7 billion parameters**, has been fine-tuned on **99,000+ mental health conversations** to provide a supportive and insightful user experience.

Engaging & Friendly Conversations

PersonaBot asks thoughtful, **inquisitive questions** in a natural and friendly manner, encouraging users to open up about their concerns.

Voice & Human Support Options

Users can access **voice-over support** and connect with professional counselors for additional guidance.

User-Centric Design

The platform's **UI is designed with real feedback from IIT Patna students**, ensuring a seamless and user-friendly experience tailored to their needs.

The screenshot shows a web browser window with the URL `localhost:8502`. The page has a light yellow background. On the left, there's a sidebar with sections for 'About' (describing it as a friendly AI-powered platform for student mental well-being), 'Features' (listing three bullet points: 'Specially curated to address student issues', 'Secured chats which stay private unless you want to share them', and 'Connect with professionals for a more "human" touch'), and buttons for 'Made by Team Draco' and 'Contact Counsellor'. The main area is titled 'What's up, John?' and shows a conversation between the user ('Me') and the bot ('John Doe'). The user says, 'I am feeling anxious lately, could you please help me'. John Doe responds, 'Of course, John Doe! I'm here to support you. Can you tell me more about what's been causing your anxiety?'. The user replies, 'My exams are coming up, and to be honest I haven't really been studying that much. I fear that I will not perform well this time'. John Doe responds, 'It sounds like the pressure of exams is weighing on you. How does that make you feel?'. The user replies, 'Anxious to be honest. I mean I am not really the best student and I don't have the best'. At the bottom, there's a text input field with the placeholder 'How are you feeling today?' and a right-pointing arrow button.

Smart Inferencing System for Detecting Potential Disorders

How It Works

1 The inferencing system **analyzes each user message** to detect potential mental health issues.

2 Utilizes a **bi-agent system** to enhance prediction accuracy.

3 The platform can **classify each message** into one of the following categories:

- **Normal**

- **Eating Disorders**
- **Addiction**
- **Emotional Issues**
- **ADHD**
- **Anxiety**
- **Autism**
- **Bipolar Disorder**
- **Depression**
- **Loneliness**
- **PTSD**
- **Schizophrenia**
- **Extreme Issues**

4 This system **runs in the background** and provides **valuable insights for counselors** to better understand user concerns.

Sample Output of the Inferencing Program

```
Content: I am feeling anxious lately, could you please help me
Prediction: anxiety
Content: My exams are coming up, and to be honest I haven't really been studying that much. I fear that I will not perform well this time
Prediction: anxiety
Content: Anxious to be honest. I mean I am not really the best student and I don't have the best grades so....
Prediction: anxiety
Content: I like playing sports from time to time
Prediction: normal
Up to date
```

Models Used

- [Mental Health Classification Model v0.1](#)
- **LLaMA 3.1**

Profile Generation Pipeline

We implement a precise yet efficient user profiling system for the therapeutic chatbot, utilizing a unique citation generation mechanism.

Key Features:

- Retrieves unprofiled user messages from the MySQL database
- Updates existing user profiles with information from unprocessed messages using a summarization agent (LLM)
- Implements a unique citation generation mechanism that employs semantic similarity scores to propagate citations across profile updates over time

Citation Generation Mechanism:

1. Summarizer Agent:
 - Employs a ChatOllama model to summarize user messages while augmenting them with the existing profile
 - Generates concise, non-repetitive summaries of all user information till-date
2. Cosine Similarity (using ChromaDB):
 - Uses HuggingFace embeddings (sentence-transformers/all-mnlp-base-v2) for semantic similarity scoring
 - Stores embeddings from both the persistent profile, and the unprofiled messages in in-memory ChromaDB collections for efficient querying
 - Propagates chat message citations by finding the most similar messages to each profile point

Usage

- Automatically updates user profiles based on new, unprofiled messages
- Marks profiled messages in the database to prevent redundant updates
- Can be run as a standalone script to update profiles for all users

Counsellor Dashboard

Key Features

Interactive Dashboard

Provides mental wellness experts with a **comprehensive view** of the student community's overall well-being.

User Profiles with Citations

Each user has a **detailed profile** along with **relevant citations** to help counselors better understand individual cases.

Automated Summaries

Generates **concise summaries** for each user, assisting counselors in the **diagnostic process**.

Psychological Trends & Graphs

Displays **real-time visualizations** of the individual's **mental health trends**, allowing experts to track psychological patterns.

Dashboard Preview

localhost:8501

Deploy

Persona

About

A friendly, interactive AI powered platform curated to assist students' mental well-being

This dashboard can be used to monitor the mental health of students

Made by Team Draco

Choose a profile

Name

1. Tejas Singh

Tejas Singh

Summary

24th March, 2025
"In my childhood, I used to be bullied because of my weight. This motivated me to start working out. However now that I am thin, I fear growing fat again and facing ridicule from others"

- Childhood bullying led to a motivation for exercise, but now fears regaining weight. [1]
- Seeking breathing exercises for de-stress relief. [2]
- Parents' disappointment in academic performance affects self-esteem. [3]
- Feeling pressure from peers with higher academic grades. [4]
- Copium use is misunderstood as self-harm, but it's a coping mechanism. [5]
- Fear of being an unmotivated person due to lack of productivity. [6]
- Struggling with starvation and negative impact on physical health. [7]
- Believes they may have bipolar disorder, seeking help. [8]
- Seeks explanation of the concept of meaning. [9]
- Frustration with innermost feelings not being addressed by the chatbot. [10]

localhost:8501

Deploy

Persona

About

A friendly, interactive AI powered platform curated to assist students' mental well-being

This dashboard can be used to monitor the mental health of students

Made by Team Draco

Choose a profile

Name

2. John Doe

John Doe

Summary

22nd March, 2025
"I can't take it any more. I wish to end it all as soon as possible"

- User inquires about counselors at their college. [1]
- User reports feeling anxious and requests help. [2]
- User is struggling with insomnia and seeks advice on how to cope. [3]
- User dislikes their college food and wants to establish a healthy diet. [4]
- User asks for breathing exercises to reduce stress. [5]
- **WARNING: User might be suicidal or may be contemplating self harm. [6]**
- User repeats request for breathing exercises. [5]

