

AI Mental Health Assistant

Overview

AI Mental Health Assistant is a demo web application to showcase modern full-stack development practices and responsible AI integration. The project demonstrates a proof-of-concept mental health companion using Next.js, Clerk for authentication, Prisma for data storage, and a fine-tuned Mistral large-language model for chat-based emotional support. It is not deployed publicly and is provided for portfolio purposes only. If you are interested in the source code, please contact the author.

Technical stack and architecture

Next.js

The front-end is built with Next.js, the React framework created by Vercel. Next.js is an open-source web development framework that allows developers to build React-based web applications with both server-side rendering and static rendering. These capabilities help deliver fast pages, improve search-engine optimisation and enable a mix of server and client rendering. Next.js also provides a file-based router, API routes and built-in optimisations, allowing the app to handle pages such as “Home”, “How it Works”, “Pricing” and “About”.

Authentication with Clerk

User authentication and session management are handled by Clerk. Clerk is a developer-first authentication and user-management solution that provides pre-built React components and hooks for sign-in, sign-up and user profiles, making it easy to drop into a React or Next.js application. Behind the scenes, Clerk manages multi-factor authentication, OAuth, session tokens and social log-ins. A dedicated Clerk dashboard lets developers configure supported sign-in methods and customise the look and feel of the auth pages. The demo app uses Clerk to allow visitors to create accounts, log in, and securely access their personal dashboard.

Database access with Prisma

Data persistence is achieved through Prisma, a modern Object-Relational Mapper (ORM) for TypeScript. Prisma’s ORM comes with a human-readable schema, automated migrations and a fully type-safe query API. By generating TypeScript types from the database schema, Prisma enables zero-cost type safety when querying the database. In this project, Prisma defines models for mood entries and reflections; it handles database migrations and exposes a high-level API for creating, reading and deleting entries.

AI CHATBOT – Mistral model and fine tuning

The conversational assistant is powered by Mistral-7B-Instruct, an instruct-tuned version of the Mistral 7B large-language model. Mistral-7B-Instruct features a 32 k token context window and is a fine-tuned version of the base Mistral-7B model. The model was trained on

a corpus of mental-health conversations between a psychologist and a client, creating a specialised assistant that can respond empathetically to emotional queries. The training dataset consists of context–response pairs sourced from online counselling platforms. This dataset allows the model to provide supportive responses, but it is still a language model and not a substitute for professional therapy.

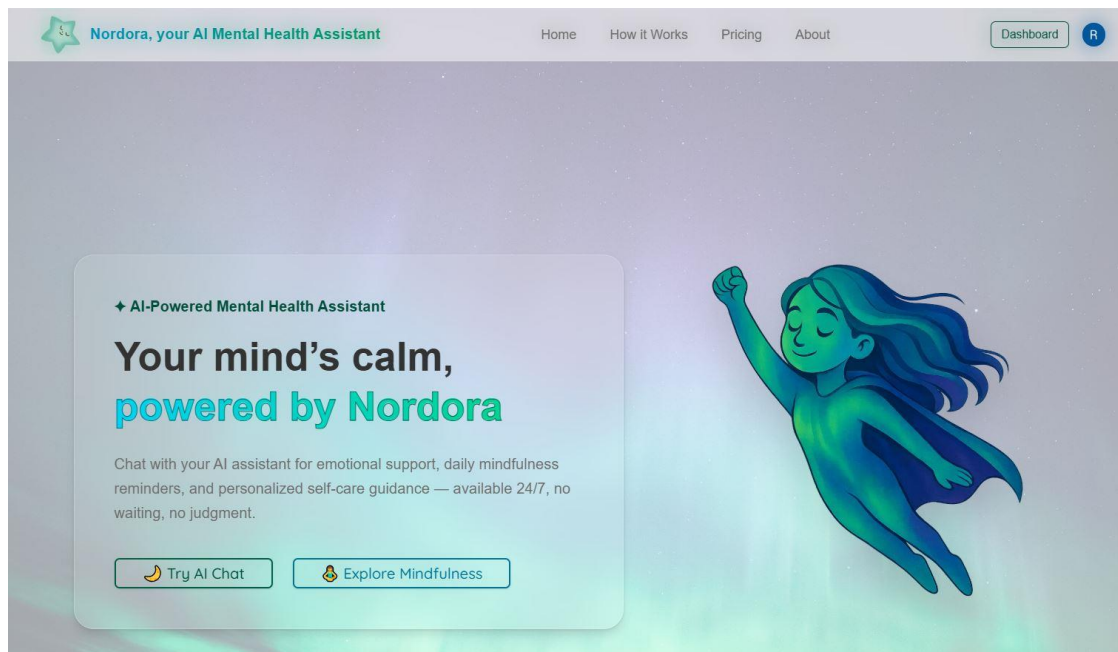
Fine-tuning vs. prompt engineering

Fine-tuning retrains a general-purpose large-language model (LLM) on a specific dataset to adapt it to a specialised domain. Prompt engineering, by contrast, designs input prompts to guide the behaviour of a pre-trained model without retraining. In this project, a fine-tuned Mistral model was used for the underlying mental-health knowledge and prompt engineering was applied to craft system prompts that encourage empathy and clear call-to-action responses. Together, these techniques deliver a chatbot that feels more personal than a generic LLM while remaining efficient to deploy.

Application features

Home page

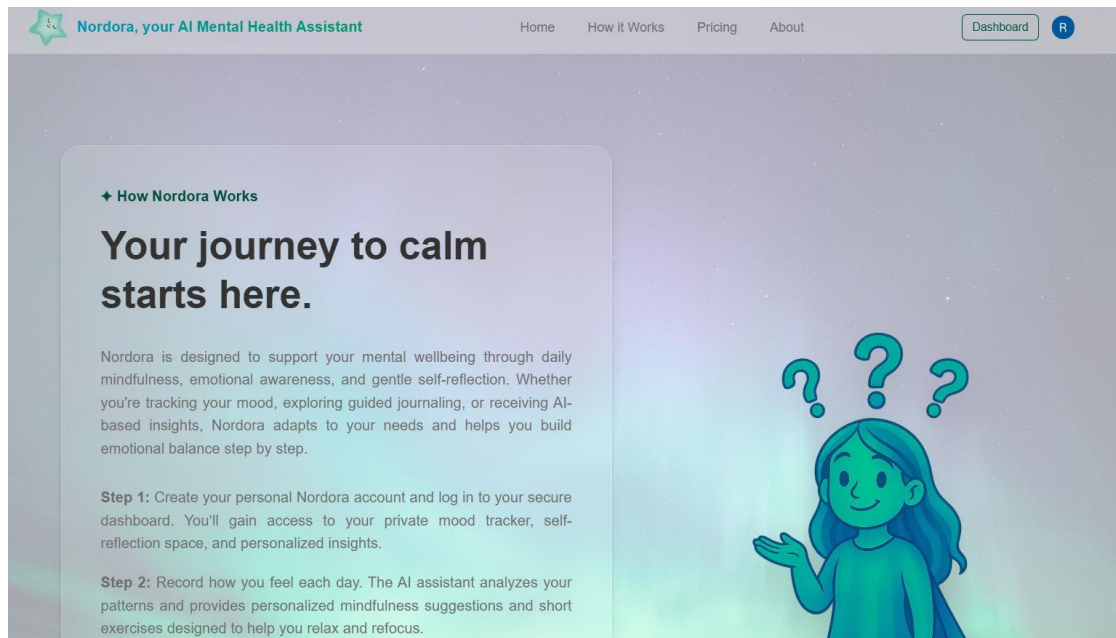
The landing page introduces Nordora, the AI mental health assistant, with a large headline and call-to-action buttons. Visitors can try the AI chat or explore mindfulness exercises.



Home page screenshot

How it Works

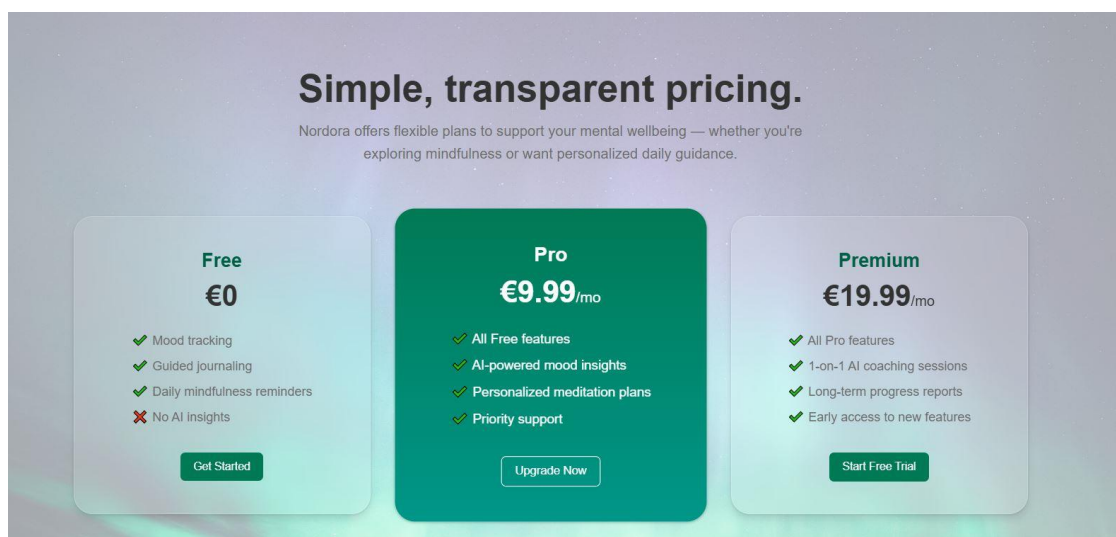
The “How it Works” page explains the user journey. Step-by-step descriptions show how users create an account, record daily mood scores, and receive personalised insights. The page emphasises that Nordora adapts to each user’s needs and helps build emotional awareness.



How it Works

Pricing page

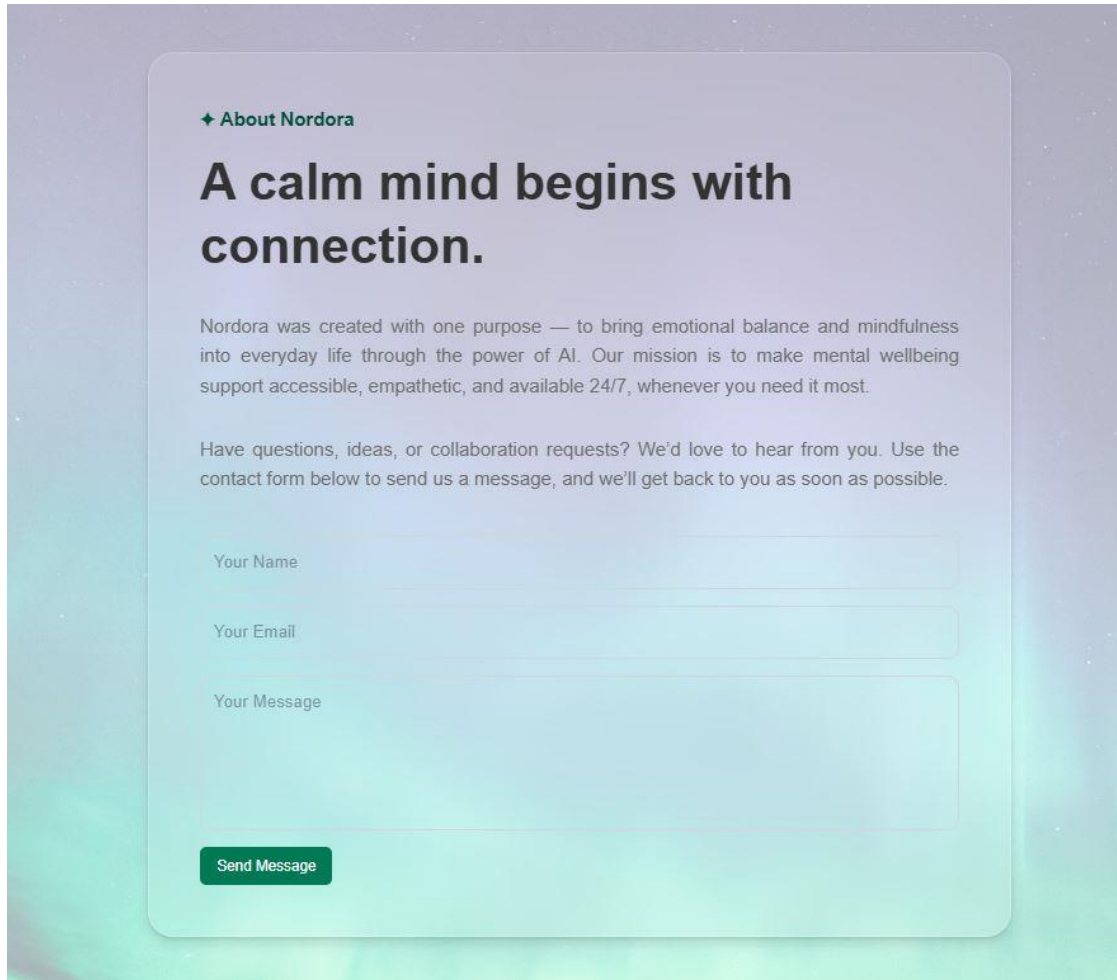
The pricing page presents transparent plans for Free, Pro and Premium tiers. The Free tier includes mood tracking, guided journalling and daily mindfulness reminders. The Pro plan adds AI-powered mood insights, personalised meditation plans and priority support, while the Premium plan introduces 1-on-1 AI coaching sessions, long-term progress reports and early access to new features. This page serves as a demonstration of flexible pricing options rather than an actual subscription service.



Pricing plans

About page

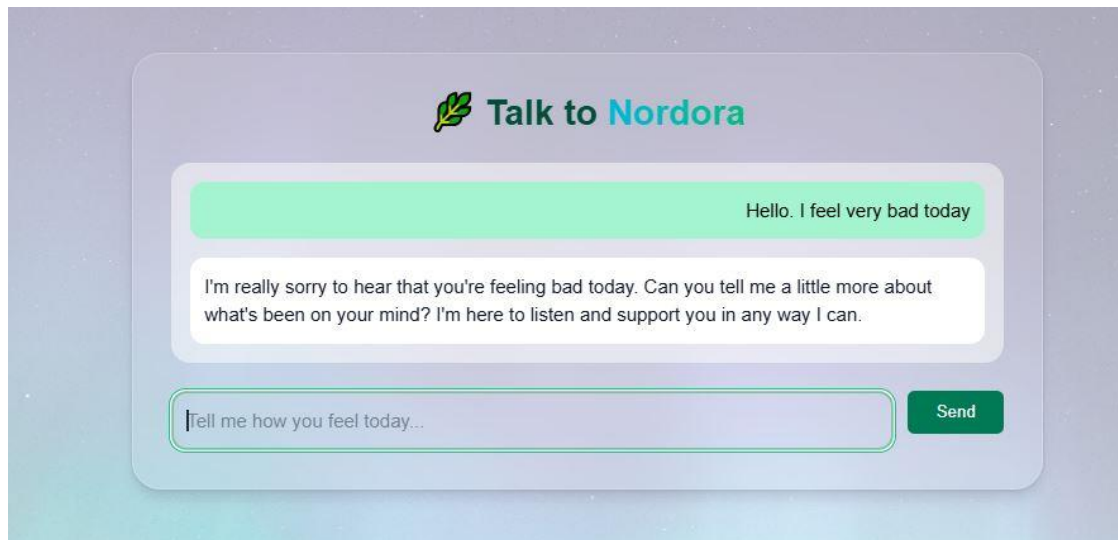
The about page communicates Nordora’s mission: “A calm mind begins with connection.” It explains that the project’s purpose is to bring emotional balance and mindfulness into everyday life through AI. A contact form allows visitors to send questions or collaboration requests. This page also reiterates that the assistant is intended as a supportive companion and not a replacement for professional mental-health care.

The image is a screenshot of a web page titled "About Nordora". The page has a light purple and teal background. At the top, there is a small green icon of a diamond followed by the text "About Nordora". Below this is a large heading "A calm mind begins with connection." in a bold, dark font. Under the heading, there is a paragraph of text: "Nordora was created with one purpose — to bring emotional balance and mindfulness into everyday life through the power of AI. Our mission is to make mental wellbeing support accessible, empathetic, and available 24/7, whenever you need it most." Below this paragraph is another paragraph: "Have questions, ideas, or collaboration requests? We'd love to hear from you. Use the contact form below to send us a message, and we'll get back to you as soon as possible." At the bottom of the page, there is a contact form with three input fields: "Your Name", "Your Email", and "Your Message". Below the "Your Message" field is a green button with the text "Send Message".

About page

Chat interface

On the home page, a “Try AI Chat” button opens a dedicated chat interface. Users can send free-form messages about their feelings, and the chatbot responds with empathetic guidance. Behind the scenes, user messages are posted to an API route that forwards them to the fine-tuned Mistral model. The system prompt instructs the model to listen attentively and provide gentle suggestions. Conversations are not stored; they are intended for real-time support only.



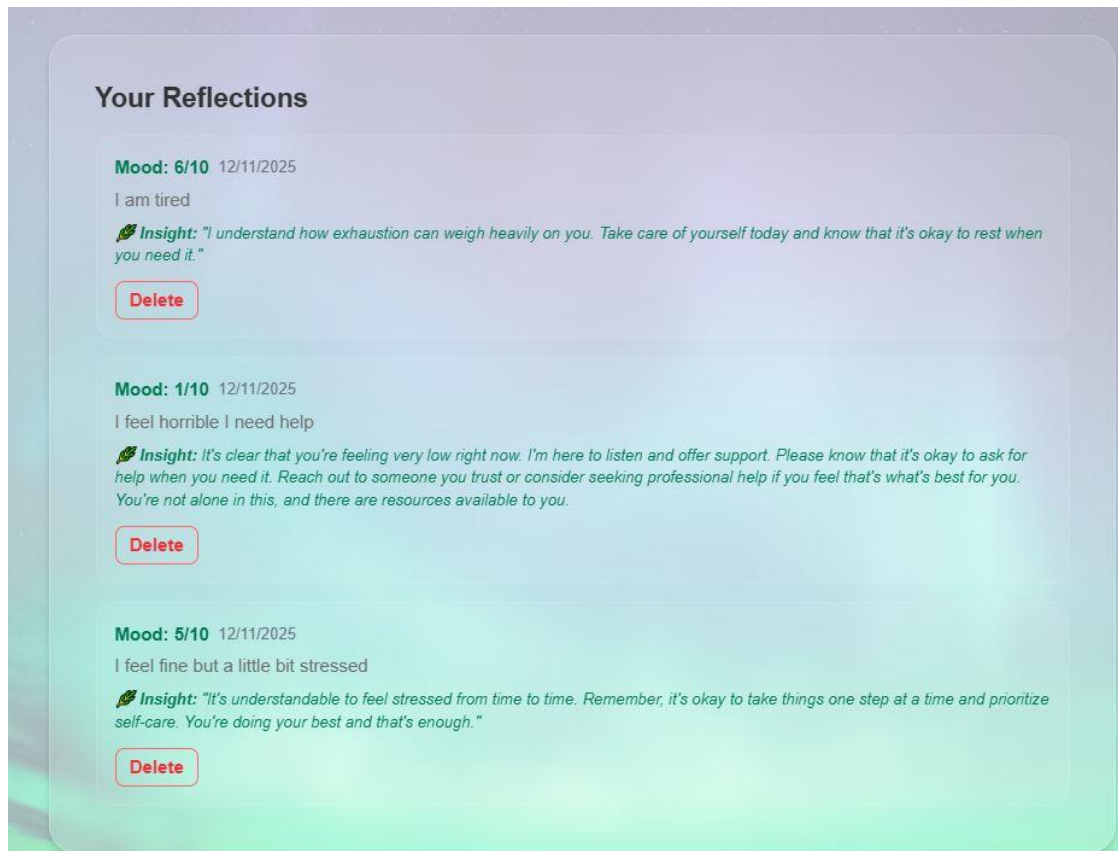
Chat interface

Dashboard and mood tracking

Authenticated users can access a dashboard where they record daily mood scores (1–10) and write optional reflections. Each entry is stored in the database via Prisma and displayed in the reflections section with an AI-generated insight. The insight summarises the user's feelings and provides gentle advice, illustrating how AI can augment self-reflection. Users can delete entries, and entries are timestamped. The dashboard also includes quick actions such as logging out.

A dashboard entry form titled "Welcome back, Renata" with a puzzle piece icon. Below the title is the subtitle "Track your mood and reflections. Notice patterns. Grow with awareness." The form contains two input fields: "How do you feel today? (1–10)" and "Add a reflection (optional)" with the placeholder "Write about your day, emotions or gratitude...". At the bottom is a green "Save Entry" button.

Dashboard entry form



Reflections with AI insights

Limitations and future work

This app is a demonstration and is not deployed to production. It is designed to showcase technical skills in full-stack development and AI integration. The AI assistant provides supportive language but is not a substitute for professional counselling. If you are interested in using or extending the project, please contact the author to discuss licensing and access.

Future enhancements could include deploying the application on Vercel, integrating real-time databases, implementing analytics, and adding more comprehensive mental-health resources. Additional safety features such as crisis-hotline redirects could also be incorporated to better protect users.