Dermora.ai: Because Your Skin Feels What You Feel

Problem: Certain chronic skin conditions—like eczema, psoriasis, and vitiligo—are highly sensitive to emotional and environmental distress. Despite clear links to stress, trauma, humidity, and UV exposure, patients lack an intelligent tool to detect, track, and manage these flare-ups holistically. Up to 33% of dermatology patients also experience psychiatric symptoms, yet mental health support remains largely absent from skin care. There's a critical need for a GenAI-powered solution that integrates diagnosis, trigger tracking, and emotional well-being into one unified system.

Target Audience & Context: Dermora.ai is designed for individuals living with chronic skin conditions like eczema, psoriasis, and vitiligo — especially those experiencing frequent flare-ups, emotional stress, and limited access to regular dermatological care. For the first time, **Dermora.ai brings these elements together into one intelligent support system — making the mind–skin–climate connection visible, explainable, and actionable.**

How Generative AI Solves These Problems:

Functionality	GenAI Implementation	Dermora.ai Advantage
Skin Disease Detection (Eczema, Psoriasis, Vitiligo)	Accepts image + symptom input; uses fine-tuned EfficientNet-B3 on HAM10000 + DermNet. Existing models have achieved accuracy of 96.2% and 99%.	Multimodal diagnosis improves accuracy across skin tones and conditions; reduces overfitting. Our Model aims to achieve 98% and 99.8% accuracy.
Mood Detector (Slider + Questionnaire)	Uses mood slider + adaptive Q&A; mood classification enhanced by RAG over past inputs.	Emotion-aware mapping predicts flare-up risk based on psychological patterns.
Personalized Care Reports	Combines climate, mood, and skin data via GraphRAG; summaries generated using GPT-4-style LLMs. No such model exists in the market right now.	Real-time contextual insights— weekly care digest personalized to user's body, mind, and environment. Our model is scalable and will be the 1st model to provide such reports.
Personalized Suggestions & Action Paths	RAG compares user's case history to similar users; recommends routines, and lifestyle steps.	Dynamic decision support — explains "why" a suggestion works using previous successful patterns.
Conversational Mental Health Agent	Powered by ElevenLabs (TTS) + Gemini AI (NLP) + tone classification from audio. No mental health agent (focused on human emotions and human interactions) * is completely perfect.	Conversational AI listens, understands tone, and supports the user emotionally in real time. Our Mental Health Agent is like a human therapist making the user feel emotionally supported.

Solution Architecture and Workflow:
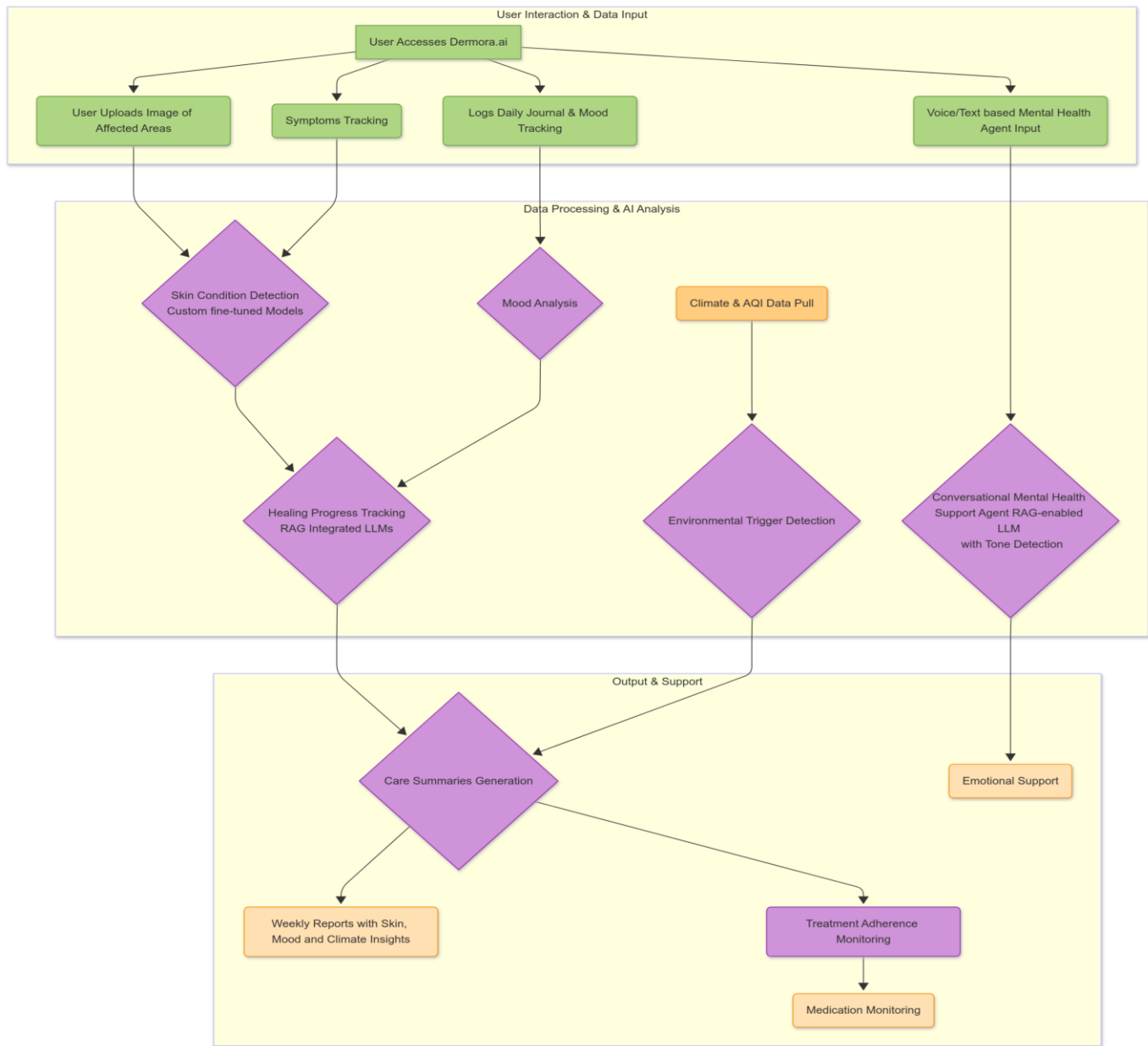
Feasibility, Tools and Data Needed: Dermora.ai is designed to be built within 48 hours using simple, modular tools. It focuses on detecting three common skin conditions: eczema, psoriasis, and vitiligo, using a fine-tuned SkinGPT-4 model trained on open datasets like HAM10000 and PAD-UFES-20. Generative AI with RAG handles care advice, emotional support, and real-time, voice-based conversations with tone detection. Weather data is pulled automatically, and user interaction is managed through a React frontend and Django backend. We also use AI tools to help generate code faster, making the entire system practical to build quickly and effectively.

Dataset Names	
HAM10000	Another more interesting than digit classification dataset to use to get biology and medicine students more excited about machine learning and image processing.
Figshare	Vitiligo images with classification labels (yes: vitiligo; no: not vitiligo)

DermNet NZ	The data consists of images of 23 types of skin diseases taken from http://www.dermnet.com/dermatology-pictures-skin-disease-pictures. The total number of images are around 19,500, out of which approximately 15,500 have been split in the training set and the remaining in the test set.

Tools		
Frontend Tools	Backend Tools	AI Tools
React, REST API Seamless user experience for uploads, chat, and insights. Components: • Image uploader & Mood Detector • Mental Health Agent interface (text/voice) • Dashboard for skin, mood, and climate insights	**Django** REST API endpoints Image upload and disease prediction Chatbot and care advice Environmental data	**Skin Detection** – Keras, TensorFlow, Open Datasets to fine-tune our models **RAG & Chatbot**- LangChain Haystack to combine LLMs (like GPT-4) with a knowledge base (User Mood Daily report, Skin data, Weather).

Scalability and Impact: Dermora.ai is built to scale. More skin conditions can be added, and detection models can be retrained with larger, more diverse datasets. The mood and tone detection capabilities will improve as more user interaction data is collected, enabling better emotional insights. Mental health support can expand through regional languages and culturally relevant content. The system can integrate with telehealth platforms or function independently as a smart care assistant. Over 150 million people live with eczema, psoriasis, or vitiligo. With early detection, up to 80% of flare-ups are preventable, and 60–70% of cases improve significantly with timely, consistent care.

Conclusion: Dermora.ai empowers users with personalized insights, early detection, and real-time support — all in one platform. The initial web app includes image-based condition detection, mood tracking, care summaries, climate insights, and a voice-based mental health chatbot. The product will launch with a **freemium model** — offering a free trial, then unlocking advanced features through paid access.By addressing both skin and mental well-being, Dermora.ai offers a more complete, human-centered approach to long-term care.

Because your skin feels what you feel.

References:-

- Salari, N., Heidarian, P., Hosseinian-Far, A. et al. Global Prevalence of Anxiety, Depression, and Stress Among Patients with Skin Diseases: A Systematic Review and Meta-analysis. J of Prevention 45, 611–649 (2024). https://doi.org/10.1007/s10935-024-00784-0
- Kroah-Hartman, M., Dooley, N., Mineur, M., Tan, W., Pizzato, J., Jackson-Duffy, F., Powell, K., Sewell, G., Lancelot, C., Moorhead, L. and McAteer, H., 2024. P36 Environmental triggers of psoriasis and relationship to disease severity: insights from the mySkin study. British Journal of Dermatology, 190(6), pp.e96-e96.
- Edge, D., Trinh, H., Cheng, N., Bradley, J., Chao, A., Mody, A., ... & Larson, J. (2024). From local to global: A graph rag approach to query-focused summarization. arXiv preprint arXiv:2404.16130.
- Sharma, S., Guleria, K., Kumar, S., & Tiwari, S. (2023). Deep learning based model for detection of vitiligo skin disease using pre-trained Inception V3. International Journal of Mathematical, Engineering and Management Sciences, 8(5), 1024.
- Hammad, M., Pławiak, P., ElAffendi, M., El-Latif, A. A. A., & Latif, A. A. A. (2023). Enhanced deep learning approach for accurate eczema and psoriasis skin detection. Sensors, 23(16), 7295.