Infosys Springboard Virtual Internship 6.0 Completion Report

Team Details

Batch Number: 6

Start date: 27/11/2025

Names:

- Akansha Bhadauria
- Aniket Paul
- Anumala Lakshman
- Onkar Ijare
- Radhika Sharma
- Vadlamudi Adarsa Naga Tulasi
- Viraj Deorukhakar
- Yashaswini R

Internship Duration: 8 Weeks

1. Project Title

AI-Based Intelligent System for Skin Disease Detection and Healthcare Recommendation

2. Project Objective

The objective of this project is to design and develop an AI-based web application that can accurately detect common skin diseases from uploaded images and provide basic healthcare recommendations. The project aims to assist users in early identification of skin conditions and help them locate nearby dermatology services using location-based recommendations. This system demonstrates the practical use of artificial intelligence and web technologies in the healthcare domain.

3. Project description in detail

This project focuses on developing an intelligent skin disease detection system using deep learning and modern web technologies. Users can upload images of affected skin areas through a web interface, which are analyzed using a CNN-based machine learning model to predict possible skin diseases. The system also provides location-based healthcare recommendations to assist users in finding nearby dermatology services.

Key Components and Technologies Used:

- **Frontend**: React with TypeScript for a responsive and user-friendly web interface
- **Backend**: FastAPI (Python) for handling API requests, image processing.
- **Machine Learning:** CNN-based deep learning model trained on labeled skin disease images
- **Database & Storage**: Supabase (PostgreSQL for data storage and Object Storage for images)
- **External API**: Google Maps API for recommending nearby dermatology hospitals and clinics

Overall, the project demonstrates the effective integration of artificial intelligence, backend services, and web technologies to build a practical healthcare support system.

4. Timeline Overview

Week	Activities Planned	Activities Completed
Week 1	Dataset collection	Collected and reviewed skin disease image datasets
Week 2	Data preprocessing and splitting	Data cleaning, image resizing, normalization, and augmentation .Split into train, validation, and test sets.
Week 3	Model architecture design and implementation	Designed and trained CNN-based classification model
Week 4	Model training, optimization, and evaluation	Trained model using Adam optimizer and evaluated accuracy
Week 5	Backend development	Implemented FastAPI backend and model integration
Week 6	Frontend development	Developed React + TypeScript user interface
Week 7	API integration and testing	Integrated frontend, backend, and database
Week 8	Final testing and documentation	Bug fixes, report preparation, and PPT creation

5a. Key Milestones

Milestone	Description	Date Achieved
Project Kickoff	Dataset collection	Week 1
Prototype/First Draft	Cleaned dataset and model training	Week 3
Mid-Term Review	Working prediction system demonstrated (ML Model + Frontend and Backend)	Week 6
Final Submission	Fully integrated system with recommendations	Week 7
Presentation	Final project demonstration	Week 8

5b. Project execution details

1. Data Preparation

- Collected publicly available skin disease image datasets
- Organized images into disease-specific categories
- Performed preprocessing such as resizing and normalization

2. Model Development

- Implemented a CNN-based deep learning model
- Trained the model using preprocessed images
- Evaluated performance using validation accuracy

3. Backend Development

- Developed REST APIs using FastAPI
- Integrated trained model for prediction
- Connected Supabase database for storage

4. Frontend Development

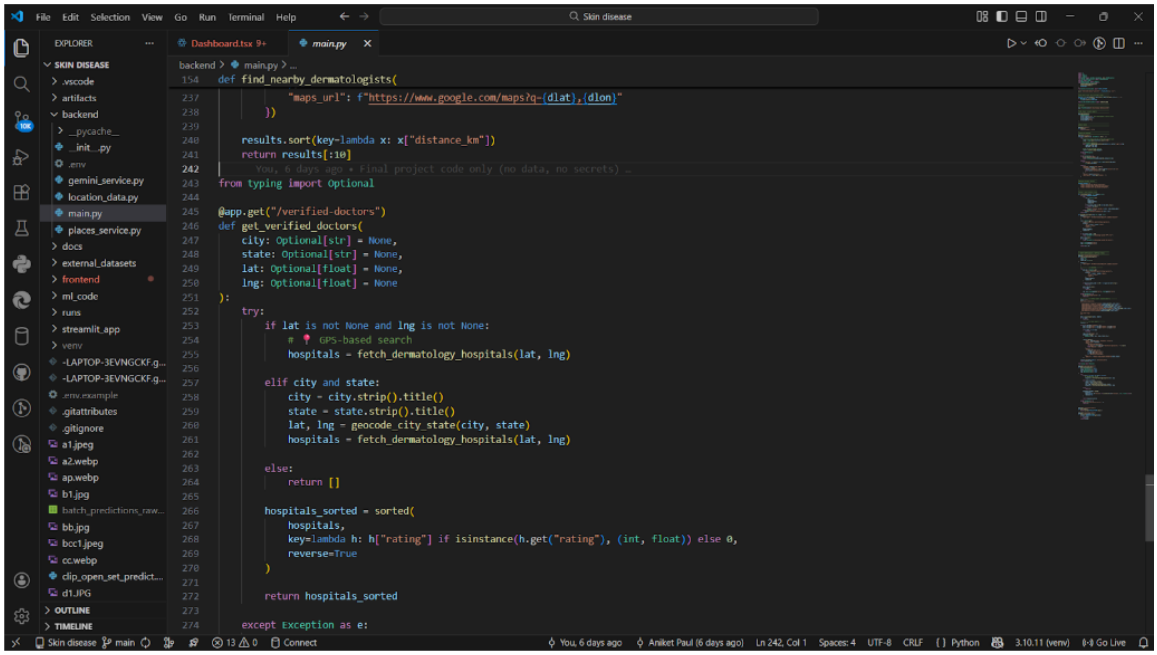
- Designed responsive UI using React and TypeScript
- Implemented image upload and result display features
- External API Integration
- Integrated Google Maps API for hospital recommendations

5. Testing and Optimization

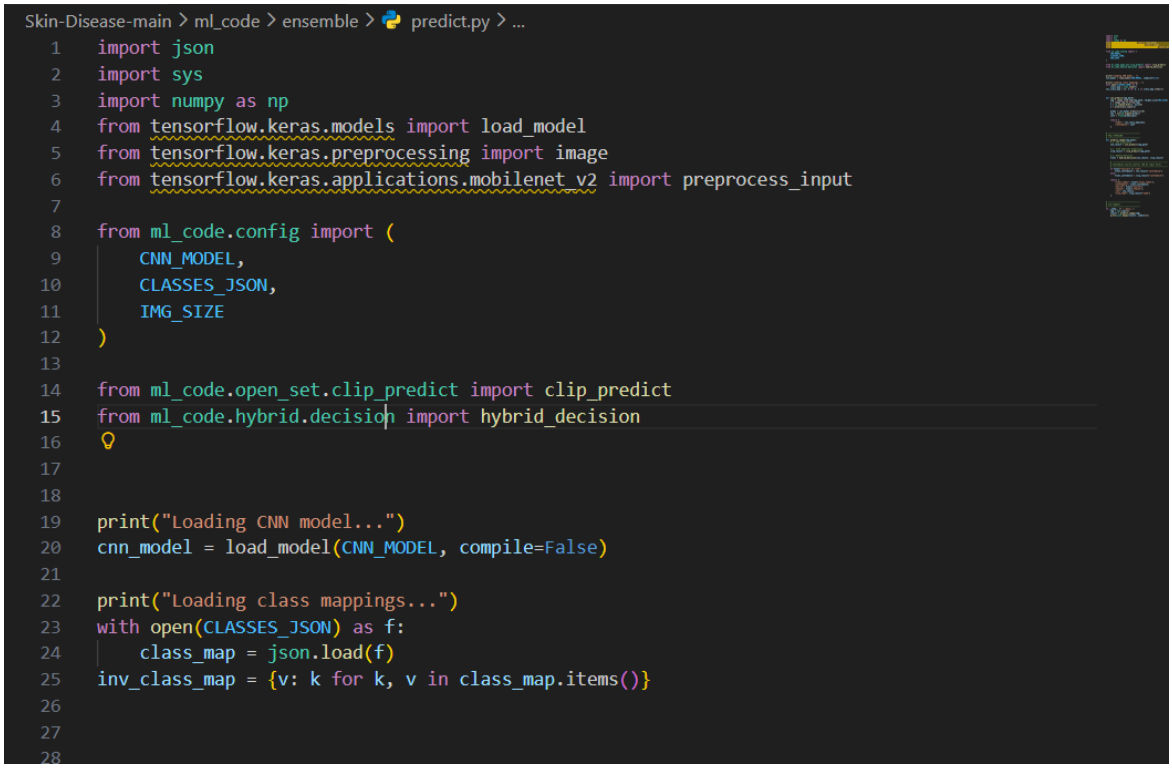
- Tested predictions with sample images
- Improved performance and fixed bugs

6. Snapshots / Screenshots

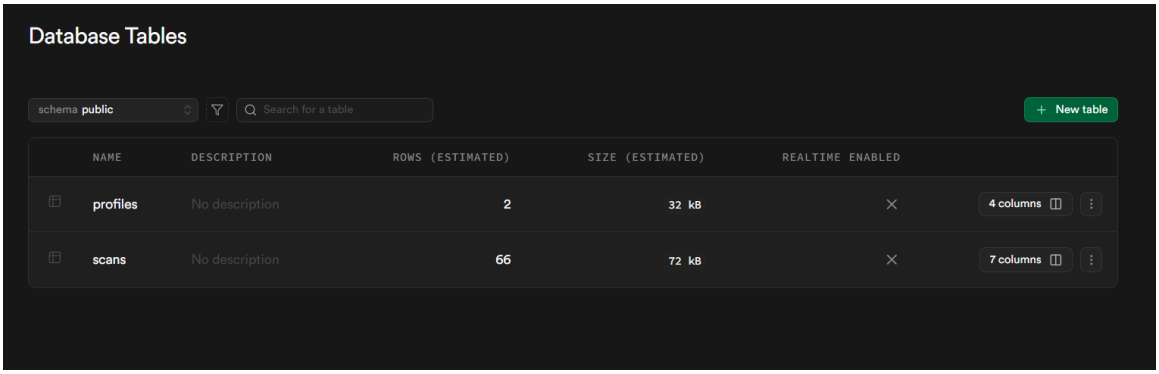
Backend : main.py



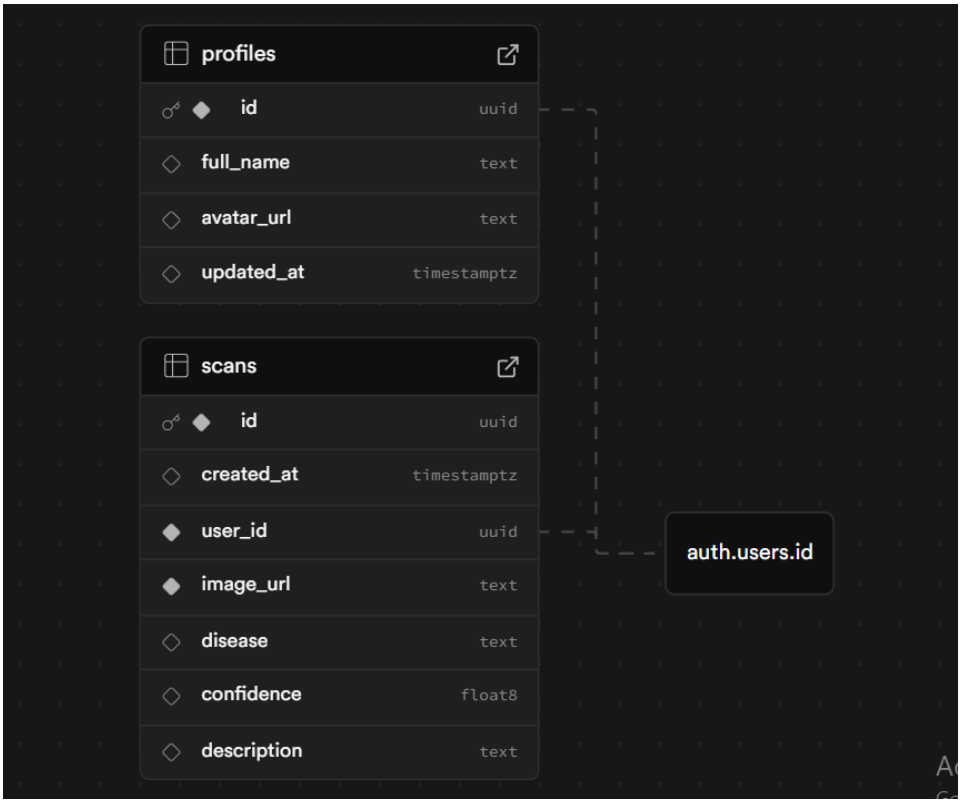
predict.py file



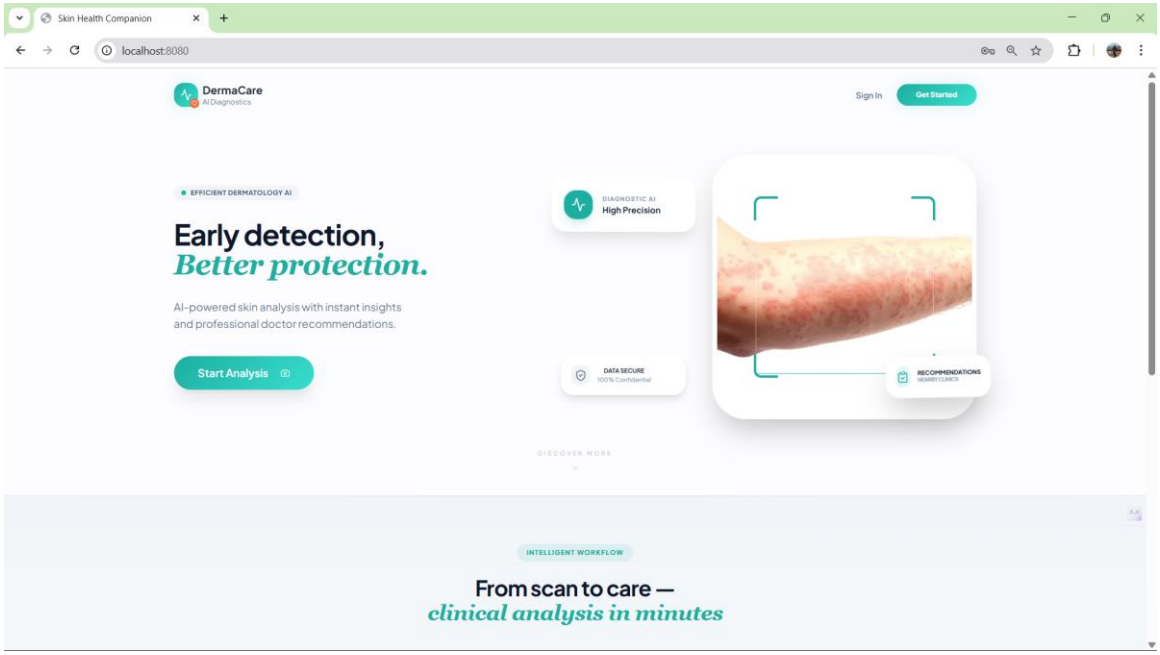
Supabase - Dashboard

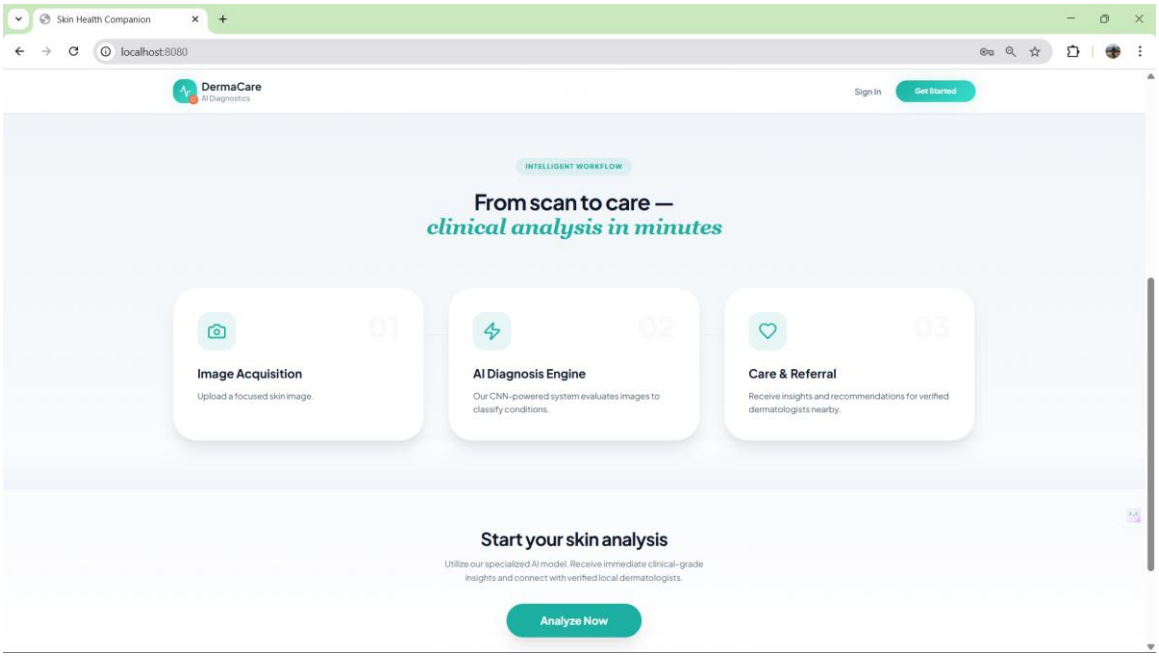


Database Schema

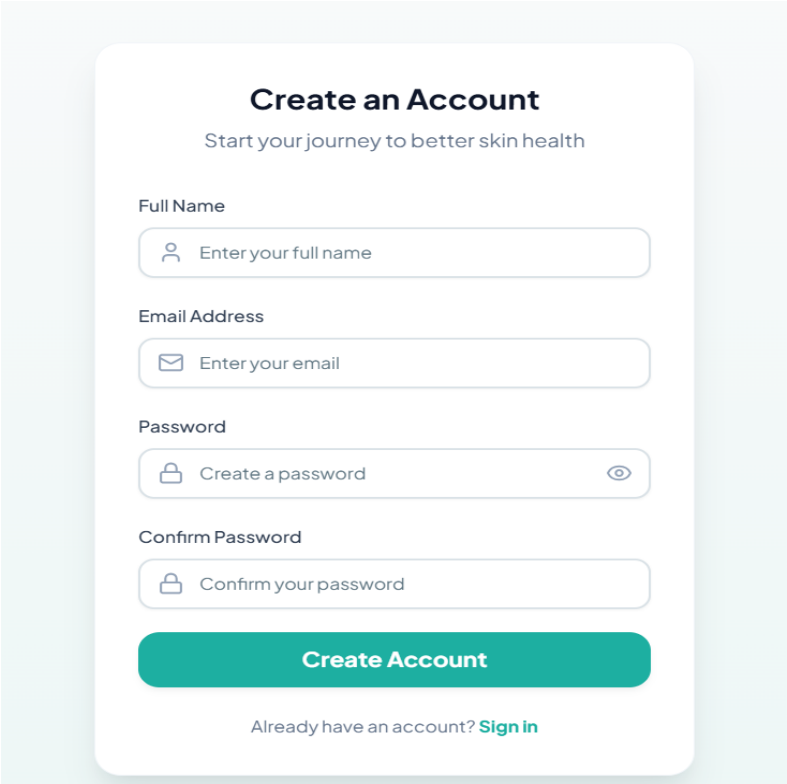


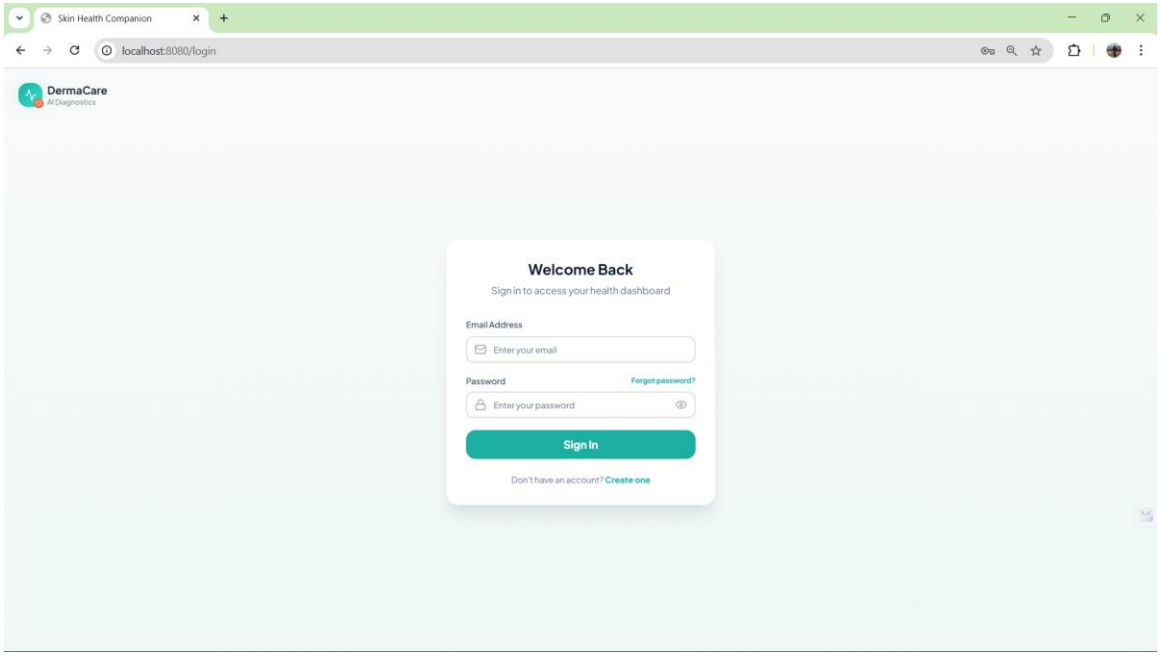
Home Page


Skin Health Companion
localhost:8080
DermaCare
AI Diagnostics
Sign In
Get Started
EFFICIENT DERMATOLOGY AI
Early detection,
Better protection.
AI-powered skin analysis with instant insights and professional doctor recommendations.
Start Analysis
DIAGNOSTIC AI
High Precision
DATA SECURE
RECOMMENDATIONS
INTELLIGENT WORKFLOW
From scan to care —
clinical analysis in minutes

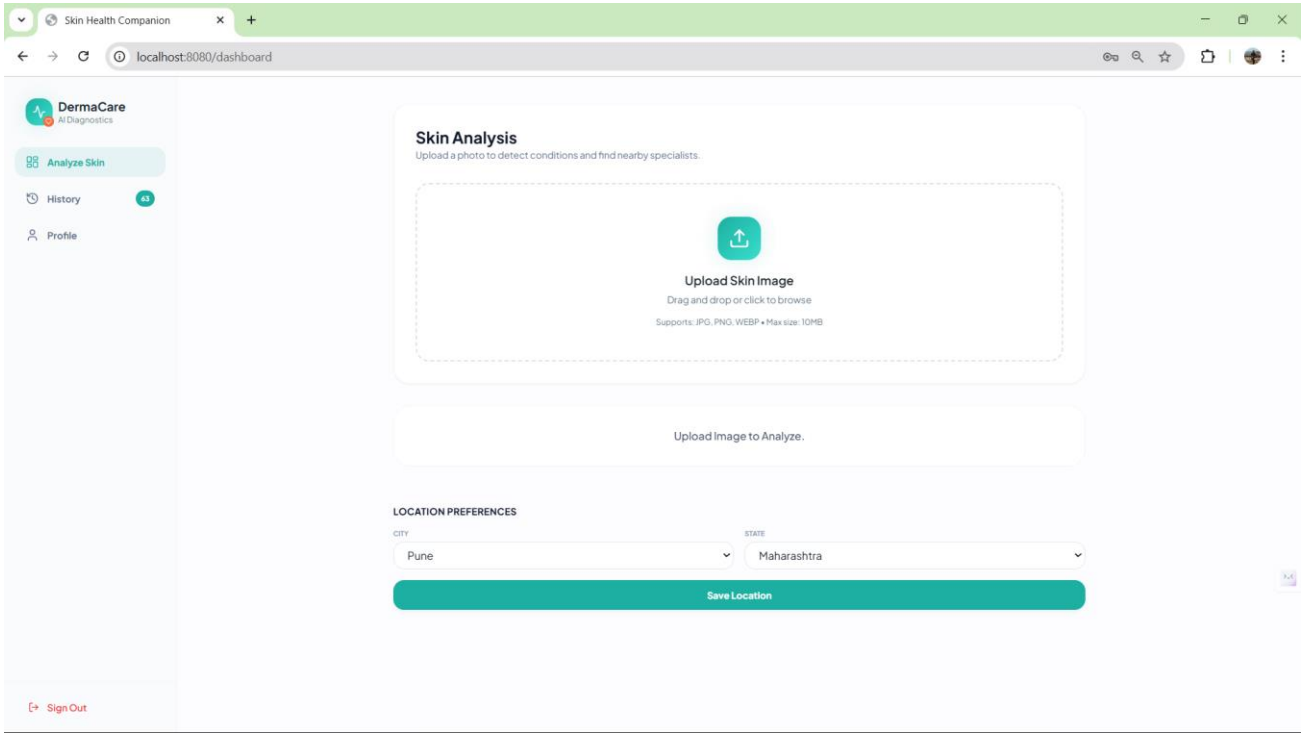

Skin Health Companion
localhost:8080
DermaCare
AI Diagnostics
Sign In
Get Started
INTELLIGENT WORKFLOW
From scan to care —
clinical analysis in minutes
01
Image Acquisition
Upload a focused skin image.
02
AI Diagnosis Engine
Our CNN-powered system evaluates images to classify conditions.
03
Care & Referral
Receive insights and recommendations for verified dermatologists nearby.
Start your skin analysis
Utilize our specialized AI model. Receive immediate clinical-grade insights and connect with verified local dermatologists.
Analyze Now

Sign Up And Login Page

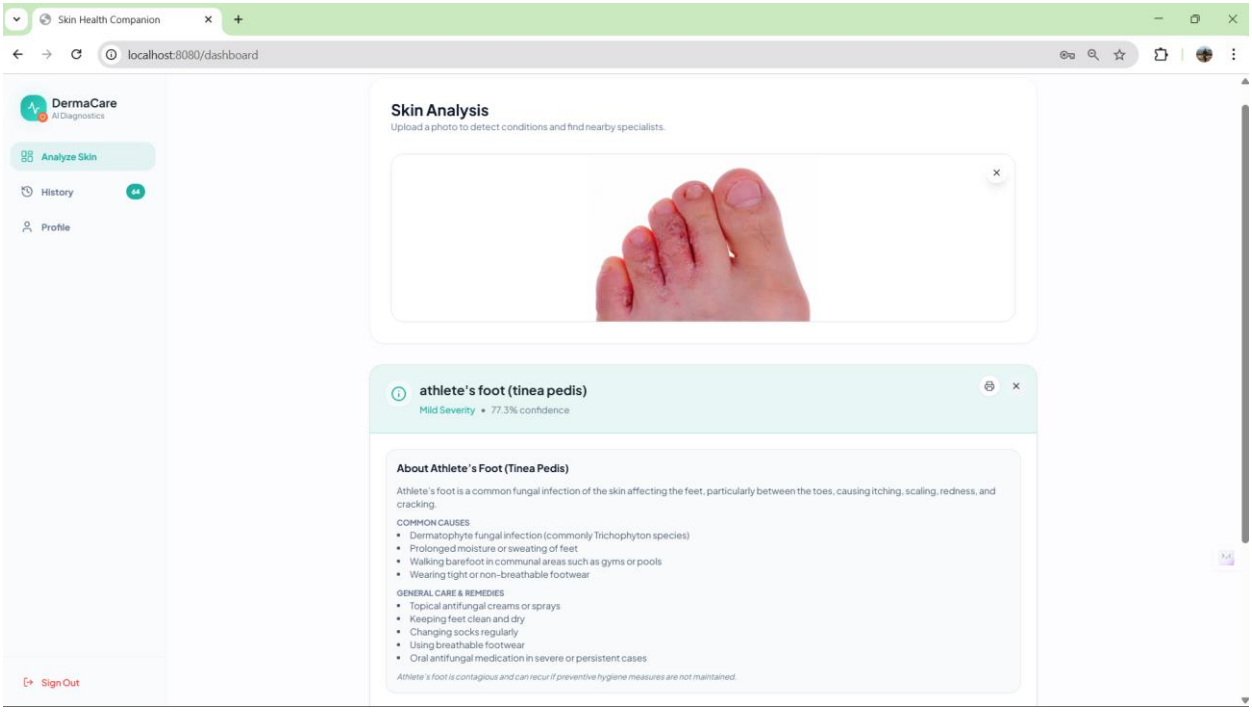




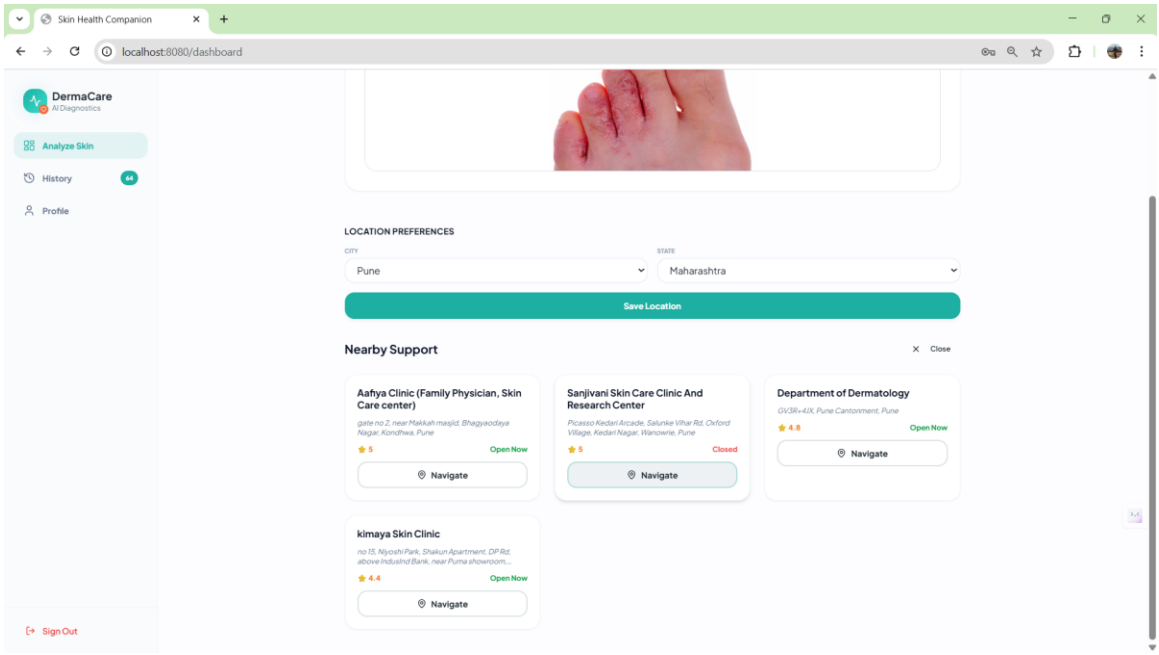
User Dashboard



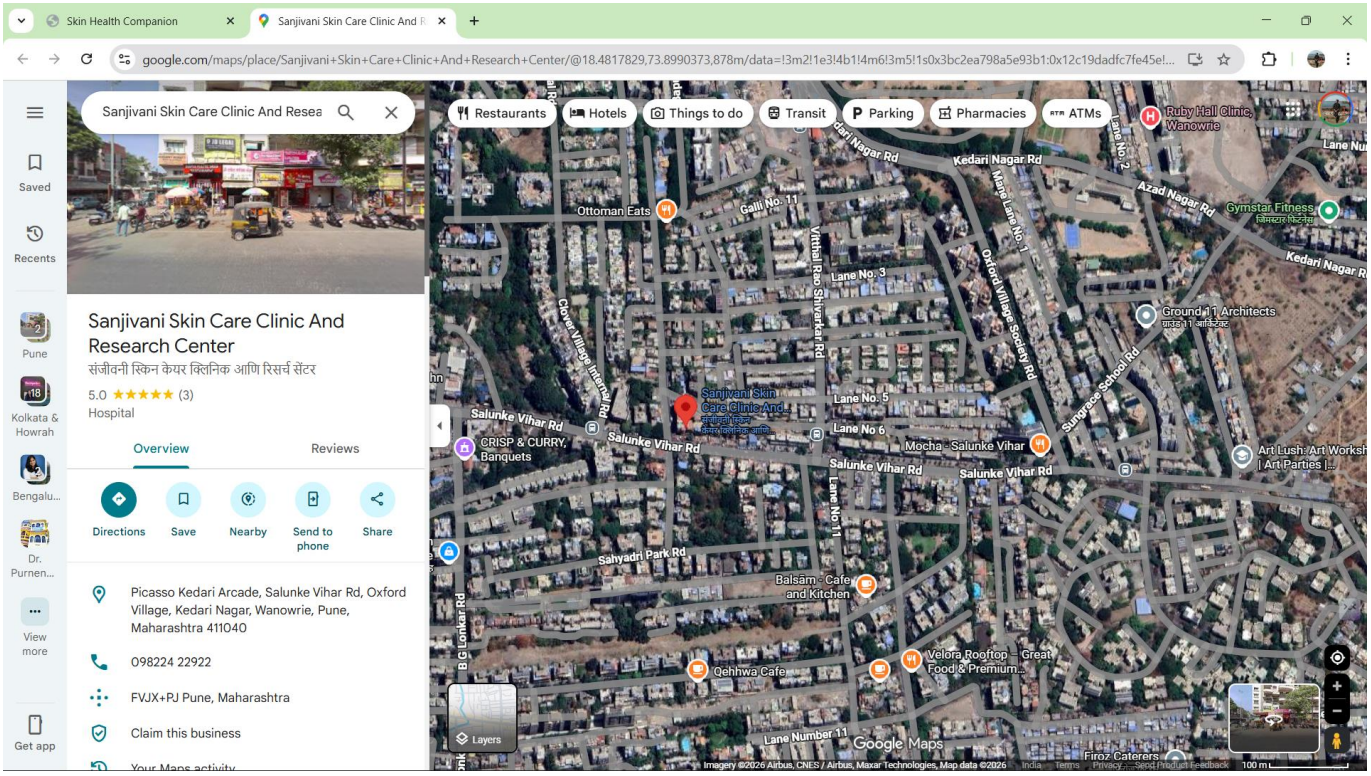
Skin Disease Detection using AI Model



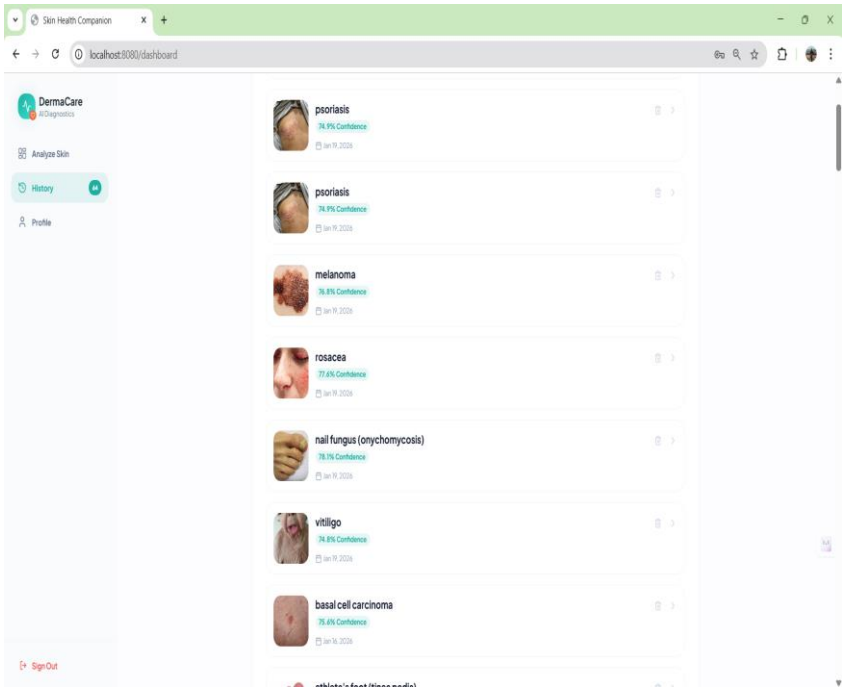
Hospital Recommendation

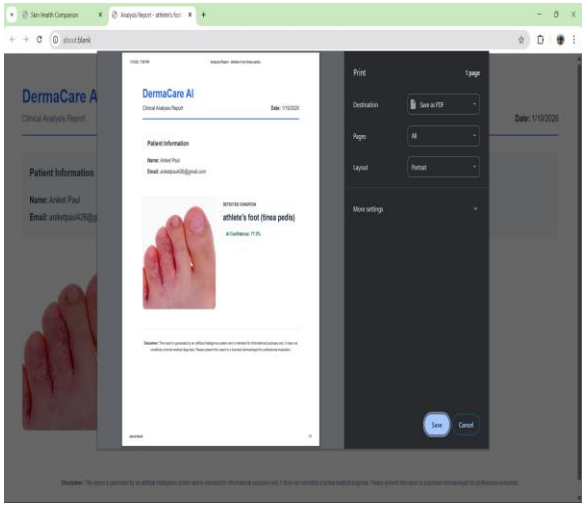


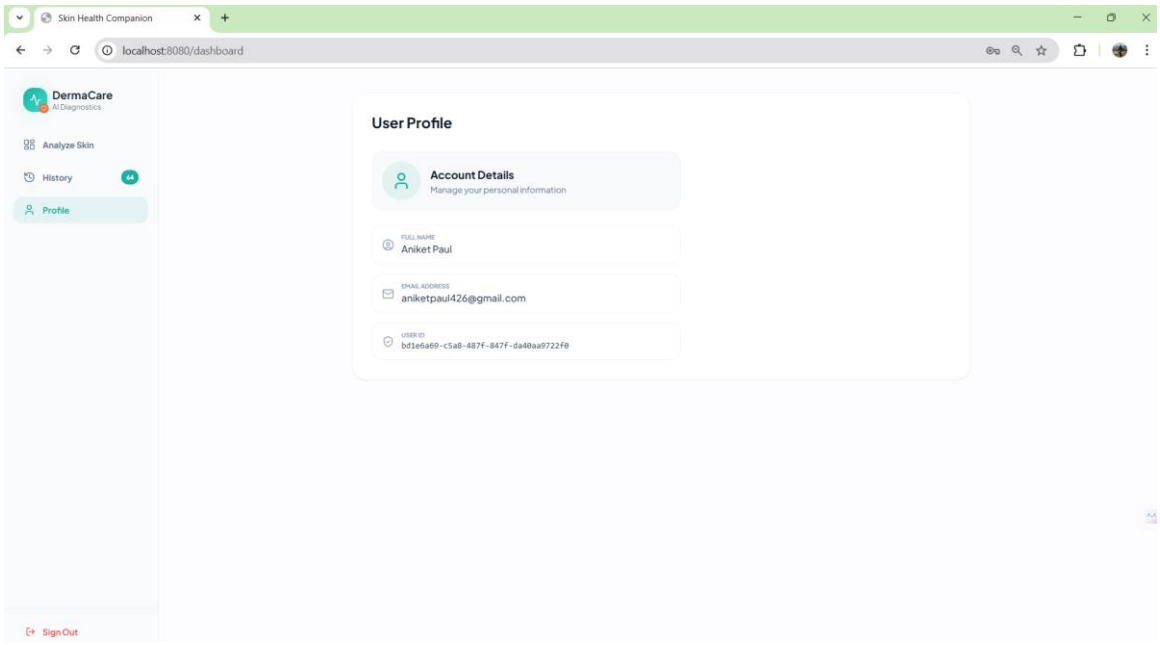
Location on Google Maps



User History







7. Challenges Faced

1. **Image Quality Variation:** Differences in lighting and resolution affected accuracy; resolved using image preprocessing techniques.

2. **Disease Classification Accuracy**: Similar visual patterns among diseases caused confusion; improved using a CNN-based model.

3. **Unbalanced Dataset**: Limited samples for some diseases led to biased results; handled using data augmentation.

4. **API Integration Complexity**: Integrating multiple services required careful debugging; resolved through modular development.

5. **Location-Based Recommendation Issues**: Inaccurate hospital results due to location changes; fixed with dynamic location fetching.

8. Learnings & Skills Acquired

Technical Skills:

- Gained practical experience in deep learning using CNN for image-based skin disease classification.
- Developed backend APIs using FastAPI for model inference and data handling.
- Built a responsive frontend using React and TypeScript.
- Integrated Supabase for database and image storage.
- Implemented Google Maps API for location-based dermatology recommendations.

Soft Skills:

- Improved team collaboration and communication.
- Strengthened problem-solving and debugging abilities.
- Learned effective project planning and time management
- Developed skills in technical documentation and professional reporting.

9. Testimonials from team

- This project helped us understand real-world AI application in healthcare.
- We gained hands-on experience in full-stack development.
- Team collaboration played a key role in successful completion of the project.

10. Conclusion

The AI-Based Intelligent System for Skin Disease Detection successfully demonstrates the use of artificial intelligence in healthcare applications. The project provides a reliable and user-friendly platform for early skin disease detection and healthcare recommendations. This internship enhanced our technical knowledge and prepared us for real-world AI and software development projects.

11. Acknowledgement

We sincerely thank Infosys Springboard for providing this internship opportunity. We express our gratitude to our mentor Mr.Hemanth Reddy for his guidance and support throughout the project. We also thank Ms. Sushma S. (Coordinator) for smooth coordination and timely updates.

Finally, we sincerely appreciate the dedication and collaborative efforts of all team members who worked cohesively, shared knowledge, and supported one another to ensure the successful completion of this project.