INTRODUCING

Vitalytics

Your Personal Skin Health Co-Pilot

⚡ **Instant Analysis**

🌿 **Holistic Guidance**

📈 **Progression Tracking**

The Skin Health Accessibility Gap

Long Wait Times

Weeks to see a dermatologist, delaying critical care

⚠️ **URGENT CARE DELAY**

High Costs

Expensive consultations making care unaffordable for many

💵 **FINANCIAL BARRIER**

Fragmented Care

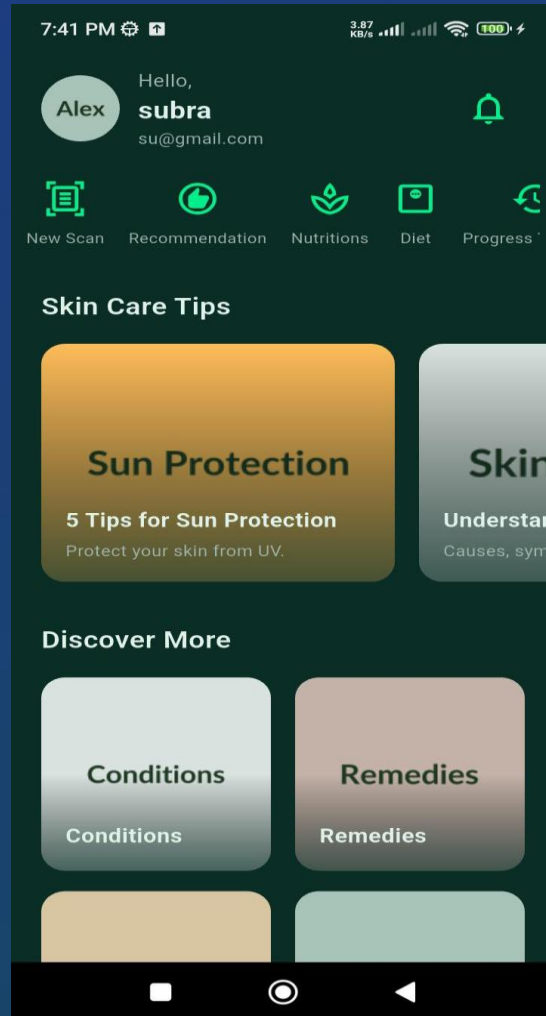Patients get a diagnosis, but no holistic plan for diet or lifestyle

🔗 **INCOMPLETE SOLUTION**

These challenges create a significant gap in skin health accessibility

Our Solution: Vitalytics

An AI-powered Skin Health Co-Pilot that fits in your pocket

Instant Triage
AI-driven insights in seconds, no waiting rooms required

Holistic Guidance
Personalized diet, medicine, and lifestyle advice tailored to your skin

Progress Monitoring
Visually track your skin's health over time with AI-powered comparison

How It Works

1. Detect

User uploads a photo of their skin lesion

Instant VLM analysis provides preliminary assessment

2. Guide

Receive immediate, structured advice

Precautions, medicine, and nutrition recommendations

3. Plan

Get personalized diet plan

Detailed food information and recommendations

4. Track

Upload new photos to track progression

Compare skin health over time with visual analytics

Simple, step-by-step process for comprehensive skin health management

App in Action

Detection Results
Instant analysis of skin conditions with detailed metrics and insights.

Progression Tracking
Visually compare skin changes over time with before/after comparisons.

Health Summary
Comprehensive overview of skin health metrics and personalized recommendations.

The entire experience is powered by our robust FastAPI backend and Gemini VLM
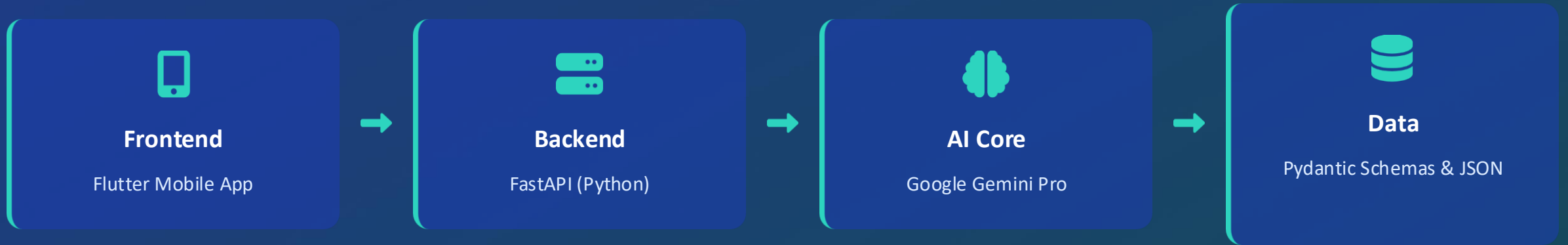
All features work offline and sync when connectivity is restored

Your skin data is encrypted and never shared with third parties

Technical Architecture

Frontend

Flutter Mobile App

→

Backend

FastAPI (Python)

→

AI Core

Google Gemini Pro

→

Data

Pydantic Schemas & JSON

💡 **Key Technical Feature: Robust Schema-Enforced AI**

We use Gemini's Tool-calling ability to force the VLM to return perfect, structured JSON matching our Pydantic models, ensuring 100% API reliability.

Our architecture ensures seamless integration between mobile frontend, Python backend, and AI-powered analysis

Tech Stack

Flutter
Frontend Mobile Framework

FastAPI
Backend API Framework

Python
Backend Programming

Google Gemini
AI/ML Vision & Text

Pydantic
Data Validation

Flutter → FastAPI → Gemini → Pydantic

Hackathon Sprint

Project Completion   100%

Full-Stack Application

Flutter App + FastAPI Backend

8 Core API Endpoints

Including detection, suggestions, diet, and progression

Advanced VLM Integration

Implemented multi-modal (image & text) AI

Reliable JSON Enforcement

Used Gemini Tool-calling for structured data

Stateful User Tracking

In-memory DB to manage the full user health journey

All achievements completed within 12-hour hackathon

Thank You

Vitalytics: Your Personal Skin Health Co-Pilot

Developed by

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Making skin health care accessible to all

💚 Vitalytics