Nutrition App Using Gemini Pro

Your Comprehensive Guide to Healthy Eating and Well-being

Category: Generative AI

# Overview

Nutritionist AI is an intelligent health and wellness application that leverages the power of Google’s Gemini Pro model to provide personalized dietary recommendations and nutritional guidance. Built using Python, Deep Learning, and Streamlit, the app helps users align their daily eating habits with their health goals by analyzing their preferences, medical conditions, and activity levels.  
  
Whether you're on a weight loss journey, managing a chronic condition like diabetes, or simply aiming to improve your overall wellness, Nutritionist AI serves as your virtual nutritionist, powered by generative AI.

# Key Features

* • AI-driven meal plan generator based on user goals and health profiles
* • Image-based food logging using deep learning
* • Barcode scanning for nutritional analysis
* • Personalized advice using Gemini Pro
* • Nutrient breakdown and daily calorie tracking
* • Fitness tracker integration for holistic health monitoring
* • Wellness tips and insights updated in real-time

# Tech Stack

Frontend: Streamlit

Backend: Python

AI Engine: Google Gemini Pro

ML Tools: Deep Learning (for image recognition), OpenCV, TensorFlow/PyTorch (if used)

APIs: Google Generative AI SDK

# Installation & Setup

# Clone the repository  
https://github.com/prashant2025349/Nutritionist-AI.git  
  
# Create and activate virtual environment  
python -m venv venv  
source venv/bin/activate # On Windows: venv\Scripts\activate  
  
# Install dependencies  
pip install -r requirements.txt  
  
# Run the app  
streamlit run app.py

# Usage

* • Launch the app with `streamlit run app.py`
* Upload food photos or scan barcodes
* Review your personalized meal plan and nutrition insights
* • Track your progress via activity logs or connected devices

# Project Structure

nutritionist-ai/  
├── app.py # Main Streamlit app  
├── ai\_model.py # Gemini Pro integration  
├── food\_analysis.py # Food recognition & barcode scanning  
├── meal\_plan\_generator.py # Logic for custom meal plans  
├── data/  
│ └── sample\_inputs/ # Sample user profiles  
├── templates/  
│ └── report\_template.md # Output formatting  
├── requirements.txt # Python dependencies  
└── README.md # Project documentation

# Use Case Scenarios

**Scenario 1: Weight Loss Journey**

Sarah, 28, uses Nutritionist AI to achieve her goal of losing 15 pounds. As a vegetarian with moderate activity levels, she receives a custom meal plan with controlled calories and nutrient-dense meals. Using barcode scans and photo inputs, she logs her meals and adjusts based on real-time feedback.

**Scenario 2: Managing Diabetes**

John, 45, with Type 2 Diabetes, uses the app for low-carb, high-fiber meal recommendations. Nutritionist AI helps him manage his blood sugar through daily guidance and adjustments tailored to his health condition.

# Limitations

* • Limited to Gemini Pro API’s free-tier quota
* • Currently optimized for English input only
* • Barcode database and image recognition accuracy may vary
* • No offline support yet

# Future Enhancements

* • Multi-language support
* • Expanded dietary preferences (e.g., keto, paleo, etc.)
* • Integration with Apple Health / Google Fit
* • Voice-based interaction
* • Recipe suggestions with cooking instructions