

Snapwork

<https://futureagi.com/>

Introduction

1. The Food Recommendation System utilizes the K-Nearest Neighbour (KNN) algorithm for personalized food recommendations.
2. It tailors meal suggestions based on users' nutritional needs, dietary preferences, and daily calorie intake.
3. The system analyzes past eating habits to refine recommendations over time.
4. Provides health-focused meal options to promote balanced and effective meal planning.
5. Supports dietary goals such as weight loss, muscle gain, or maintaining overall health.
6. Designed for accessibility and user convenience, ensuring a seamless user experience.
7. Can integrate with fitness tracking apps to sync activity levels with meal recommendations.
8. Offers real-time suggestions based on meal availability, allergies, or restrictions.
9. Helps users maintain healthier eating habits effortlessly through data-driven insights.
10. Includes a user feedback loop to continuously improve recommendation accuracy.
11. Can be expanded to support multiple cuisines and regional dietary preferences.

Application Flow

- **User Data Retrieval:**
 - Collect user profile details, calorie requirements, and food preferences.
- **Data Preprocessing & Feature Engineering:**
 - Transform food items into feature vectors (e.g., calories, protein, carbs, fats).
 - Standardize data using **NumPy & SciPy** for optimized KNN performance.
- **KNN Algorithm Application:**
 - Match the user's profile vector with the food dataset.
 - Identify the '**k**' **most nutritionally similar** food items.
- **Personalized Meal Recommendation:**
 - Prioritize meals based on **user history and dietary goals**.
 - Ensure **variety** by minimizing repetitive meal suggestions.

Food Recommendation System

Age

Height(cm)

Weight(kg)

Gender

Male

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Calories consumed today:

Protein Consumed today:

Get Recommendations

NAME	CALORIES	FATCONTENT	SATURATEDFATCONTENT	CHOLESTEROLCONTENT	SODIUMCONTENT	CARBOHYDRATECONTENT	FIBERCONTENT	SUGARCONTENT	PROTEINCONTENT	ACCURACY
Linguine with Salmon and Mushrooms	523.9	19.8	3	52.3	290	49.4	3.7	4.6	33.6	95.05
Curried Chicken Pitas	431.7	15.4	2.2	52.5	391.2	49.2	4.2	12.2	25.5	94.38
Linguine with White Clam Sauce	561.6	20.4	2.8	50.9	99.3	55.2	2.8	3.3	27.4	93.15
Pesto Packet Chicken	724.5	29.9	4.4	68.4	127	72.7	5.1	5.9	40	93.09
Pasta with Spicy Tuna Sauce	832	19	3.9	76	99.7	98.5	7	9	64	92.9

Tech Stack

Technology	Version	Description
React js	Latest	Frontend framework for building cross-platform mobile applications.
FastAPI	v0.112	
Python	v3.12	
SciPy	v1.14.1	
NumPy	v2.1.0	