Ideation Phase
Empathize & Discover

Date	19 September 2022
Team ID	PNT2022TMID03894
Project Name	AI-powered Nutrition Analyzer for Fitness Enthusiasts
Maximum Marks	4 Marks

Literature Survey:

S.NO	TITLE	AUTHOR	YEAR	ABSTRACT	TECHNOLOGY
1.	AI-powered Nutrition Analyzer for Fitness Enthusiasts	Meng-Lin Chiang, Chia-An Wu, Jian-Kai Feng, Chiung-Yao Fang, Sei-Wang Chen	2019	The proposed system aims to assist users to organize their diets. This is achieved through food recognition and calorie nutrient analysis. This analysis uses food images as input to the system, based on Mask R-CNN to detect and recognize food class and food masks. The diet's weight is determined using linear regression. By using the food mask, it is possible to determine how much food is present in the image.	Mask R-CNN
2.	DeepFood: Food Image Analysis and Dietary Assessment via Deep Model	Landu Jiang, Bojia Qiu, Xue Liu, Chenxi Huang and Kunhui Lin	2020	The suggested system is a three-step algorithm that determines multi-item (food) images by recognising candidate regions and utilizing CNN. This algorithm will provide consumers a clear understanding of a balanced diet and direct them to improve their health.	Faster R-CNN model

3.	Nutrient Food Prediction Through Deep Learning	Saikat Banerjee, Abhoy Chand Mondal	2021	The main goal of this effort is to identify and distinguish between regular food and food that is nutritious. The combination of nutrition and image classification algorithms is used to achieve this. As a result, the suggested system's average overall accuracy was above 91%.	CNN
4.	Lightweight and Parameter-Optimized Real-Time Food Calorie Estimation from Images Using CNN-Based Approach	Rakib Ul Haque, Razib Hayat Khan, A. S. M. Shihavuddin, M. M. Mahbubul Syeed and Mohammad Faisal Uddin	2022	In this study, a lightweight, ideal CNN model is created. It experiments with various configurations and achieves an accuracy score of about 85%. Using straightforward linear processes, the method is simple to train and may be used to apply improved accuracy to bespoke data sets.	Lightweight ideal CNN

Reference Links:

1. AI-powered Nutrition Analyzer for Fitness Enthusiasts - https://ieeexplore.ieee.org/document/9064257

2. DeepFood: Food Image Analysis and Dietary Assessment via Deep Model - https://ieeexplore.ieee.org/document/8998172

3. Nutrient Food Prediction Through Deep Learning - https://ieeexplore.ieee.org/document/9545014

4. Lightweight and Parameter-Optimized Real-Time Food Calorie Estimation from Images Using CNN-Based Approach - https://www.mdpi.com/1854364

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