

AI BASED NUTRITION ANALYSIS  
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## ABSTRACT:

Over the past two decades nutrition became the serious issue in news that is around 2 million children all around the world is suffering from various diseases because of malnutrition. In some places like Namibia, Tanzania, Somalia, Zambia, etc., the reason may be the environment and natural problem in the geographical location of that place. But in some places people don't get aware of the nutrition problems that the world encounter. Even though some one came to know about this means they don't know what to do and where to find the solution. As I said before the countries in African region were poor at vegetation thus results in the loss of habitat and produce so many diseases to the children and more old people also get problem because of the improper diet. All the solution to this problem is that we need to create an awareness about this problem and make the people to know about this and made them to live a happy life.

Now through what way we can answer for the question above. Firstly, we should create an API that is having the feature of nutrition chart based on age and how much calories they need to intake. Then there should be calculator working based on the AI to track whether he take proper diet. The reason why we use AI is to get better accuracy through the neural networks option. Then at last it should say the tips that food with lower cost which is having high protein and nutrition. Thus, help people to afford it easily. The main reason for developing the API is all the people to get good physical health in order to live a happy life.

# ANALYSIS

S.NO.	AUTHOR	YEAR	TITLE	METHODOLOGY
1.	Raciel yera toledo , ahmad a. Alzahrani <sup>2</sup> , and luis martínez	2019	A Food Recommender System Considering Nutritional Information and User Preferences	Nutrition recommendation system and IOT for continuous monitoring
2.	Arnel B. Ocay Jane M.fernandez Thelma p palaoag	2017	Android-based Food Recognition App for Nutrition Awareness	Data analysis on level of nutrition analysis.
3.	J. Aravind, J. Dhalia Sweetlin	2017	Nutrient Facts Analysis using Supervised Learning Approaches	Data retrieval, Data cleaning, Classification, Accuracy prediction.
4.	Meng-Lin Chiang, Chia-An Wu, Jian-Kai Feng, Chiung-Yao Fang, Sei-Wang Chen	2019	Food Calorie and Nutrition Analysis System based on Mask R-CNN	Mask R CNN, Food image input, Food identification, Food weight estimation, Calorie and nutrition analysis and output.

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5.	Raza yunus , omar arif , hammad afzal , muhammad faisal amjad , haider abbas, hira noor bokhari , syeda tazeen haider , nauman zafar , and raheel nawaz	2019	A Framework to Estimate the Nutritional Value of Food in Real Time Using Deep Learning Techniques	Deep learning, CNN, Data preprocessing
6.	Ms Swapnil Verma Dr.Sushopti D.Gawade	2021	A machine learning approach for prediction system and analysis of nutrients uptake for better crop growth in the Hydroponics system	CGR using machine learning
7.	Mahmoud Y. Shams , Omar M. Elzeki , , Lobna M. Abouelmagd , Aboul Ella Hassanien ,f , Mohamed Abd Elfattah , Hanaa Salem	2021	A Healthy Artificial Nutrition Analysis model during COVID-19 pandemic	Preprocessing, Normalization, Regression prediction models
8.	Ya Lu, Thomai Stathopoulou, Maria F. Vasiloglou, Stergios Christodoulidis, Zeno Stanga, and Stavroula Mougiakakou	2020	An Artificial Intelligence- Based System to Assess Nutrient Intake for Hospitalised Patients	RGB D pairs Food segmentation, Food identification, weight entry and nutrition estimation

## REVIEW OF LITERATURE

From the above references we came to know that all the existing model in the market for nutrition analysis is made for a singular task performing system.

The common thing among them is, they get an input for the food in the form of weight and picture and they are calculating based on the data available on the database and then they are producing the number of calories and protein that the person intaking. Through this we can't able to solve this nutrition problem that occurring in that society.

They are using various technology such as

1.IOT

2.CNN

3.Machine Learning

4.Deep learning

5.Data Preprocessing

Etc. in order to develop the application or website or API.

Through the above methodologies we came to know that various mechanism which will be useful in order to prepare the project.

## RESEARCH GAP:

The reason why the above researchers choose this topic is to demolish the malnutrition problems among the children and old people. But they don't listen about the plants and vegetation malnutrition. One of the reasons for the malnutrition is that the plant grown based on may artificial chemical and manmade fertilizers. This not only affect the plant but also the people who are eating those. The farmers also don't have the knowledge how to cultivate the crops naturally.

They may be well good at the olden day crops but the current hybrid or modified seeds are completely different. So, they should be provided the knowledge about the proper cultivation mechanism and usage of what natural fertilizer that the crops will accept.

They also provide only the data for the given input. But the people still don't know what to eat and how to eat those foods that is cooking style.

They also want to think about the cost of the food item they are recommending can be affordable by the people or not. Whatever the food they recommend is costly or not available in their region or not. for those things they are using another social media such as YouTube, etc.

In order to fill the above gaps in the problem we are here to explain you our project by filling all the above gaps in our product.

## SOLUTION THROUGH OUR PROJECT:

As I have already said that the gaps in the project above done. Simply we recall those problem.

The problems are:

1. Not details about the plantation nutrition.
2. Lack of details about the availability of food.
3. cost about the food that the user can afford or not.
4. optional food menu is not available.

Let us deeply discuss about the problems above and the overcome solution.

Firstly, lack of details about plantation nutrition in order to fill that gap we are introducing the separate column in our app and then we can able to fill that gap by providing details about the plants type and what kind of fertilizers we should us for them in order to grow in the proper manner, etc., are available in that column.

Secondly, lack of details about the availability of food. This can be solved by the column in which the available market places or shops can be placed with the help of the location we can able to access. The users need not go for other apps to find those. The search option will be given on the top of that column.

Thirdly, the cost of the food or medication or nutrition suppliers that user or customer can able to buy or not. Because the nutrition suppliers and product are costly and not available in the market easily. So, in that column we can give the rates of the food materials and which shop it will be available is also given with the details that too in lower rate with the best quality.

At last problem we encounter is eating the food. The food cannot be accepted by their body due to some allergies examples is dry grapes. For that kind of people, we should give alternative food. For Examples if we ask people to take dry grapes or apples, they can't eat it or can't buy we can provide the name of amla that provide same nutrition.



## CONCLUSION:

Thus, the problems already said can be solved by the solution given above which will be definite part in our product. I conclude my survey and give you the promising word that this product will be the key to demolish the malnutrition problems all over the world and this will help the people to live long with better physical health and without any diseases.