



**M.KUMARASAMY**  
**COLLEGE OF ENGINEERING**

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Thalavapalayam, Karur – 639 113.



## **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

### **LITERATURE REVIEW OF NALAYATHIRAN PROJECT**

**TITLE** : NUTRITION ASSIATANT APPLICATION

**DOMAIN** : CLOUD APPLICATION DEVELOPMENT

**FACULTY MENTOR** : Dr. S. SUJANTHI M.E., PH.D.,

**INDUSTRY MENTOR** : SOWJANYA, SANDEEP DOODIGANI

**PROJECT MEMBERS** :

<b>REGISTER NO</b>	<b>NAME</b>	<b>ROLE</b>
19BCS4095	D. RAGULRAJ	LEADER
19BCS4049	A. KAAVIYA	MEMBER
19BCS4079	A. MOUNIKA	MEMBER
19BCS4105	L. SANTHIYA	MEMBER

## **ABSTRACT**

This project aims at building a web App that automatically estimates food attributes such as ingredients and nutritional value by classifying the input image of food. Our method employs Clarifai's AI-Driven Food Detection Model for accurate food identification and Food API's to give the nutritional value of the identified food. This will develop by using IBM Cloud, HTML, Javascript, Cloud Object Storage, Python-Flask, Kubernetes, Docker, IBM DB2, IBM Container Registry.

## **LITERATURE REVIEW**

### **1. Role of Food Prepared Away from Home in the American Diet, 1977-78 versus 1994-96: Changes and Consequences**

To examine changes, between 1977-78 and 1994-96, in the quantity and quality of food Americans consumed that was prepared at home versus away from home. Data were obtained from nationwide surveys of food consumption conducted by the US Department of Agriculture (USDA) in 1977-78 and 1994-96. To maximize comparability, we used "day 1" dietary data, which both surveys collected via 24-hour recall. Individuals 2 years of age and over were selected. USDA sampling weights were used to generate nationally representative estimates. We categorized foods by preparation at home or at restaurants, fast-food establishments, schools/day care, and other non-home locations. We assessed percent calories from total fat and saturated fat, and the cholesterol, sodium, fiber, calcium, and iron densities of foods prepared at home versus those prepared away from home. T tests were calculated using accepted procedures to adjust for survey design effects. Between 1977-78 and 1994-96, consumption of food prepared away from home increased from 18% to 32% of total calories. Meals and snacks based on food prepared away from home contained more calories per eating occasion, and "away" food was higher in total fat and saturated fat on a per-calorie basis than at-home food. "Away" food contained less dietary fiber, calcium, and iron on a per-calorie basis. Among adults but not children, food prepared away from home was more sodium and cholesterol dense. When developing intervention messages and strategies, nutrition educators need to be aware of the increasing role of "away" food in Americans' diet.

## **2. Correlates of Fruit and Vegetable Consumption Among 11-Year-Old Belgian-Flemish and Dutch Schoolchildren**

To determine factors associated with the consumption of fruit and vegetables among 11-year-old schoolchildren in Belgium-Flanders and the Netherlands. In total, 2468 school children from 98 randomly selected schools participated in a cross-sectional survey. Frequency of fruit and vegetable intake and potential personal, social and environmental correlates were measured by means of self-administered, school-based, written questionnaires. Hierarchical multiple regression analyses were conducted to assess potential correlates of schoolchildren's fruit and vegetable consumption. Separate analyses were conducted for boys and girls. Bringing fruit to school, modeling behavior of parents and friends, parents demanding that their child eat fruit, knowledge about recommended intake levels, liking fruit, and self-efficacy to eat fruit were the strongest correlates of fruit intake. For vegetables, gender, parental demand, parents facilitating the consumption of vegetables by cutting them for their child, modeling behavior of parents and friends, and preferences for vegetables emerged as strongest correlates. No substantial differences in significant correlates were found according to gender. The percentage of explained variance was 33.7% for fruit and 28.4% for vegetable intake. Interventions need to be focused on personal (taste preferences), social (parental influences), and environmental factors (availability).

## **3. Nutrition Education in the Context of the United Nations Standing Committee on Nutrition Activities and Publications, 1985-2006**

The United Nations System Standing Committee on Nutrition (SCN) is a forum where United Nations (UN) agencies, bilateral partners, and nongovernmental agencies meet to harmonize and coordinate nutrition policy and programs. This report reviews the positions taken regarding nutrition education throughout SCN publications, annual sessions, and thematic working groups. The first Nutrition Policy Paper, published in 1985, was a State-of-the-Art Review that investigated 6 aspects of a nutrition education system. Later SCN publications and meetings have further addressed how to conduct effective nutrition education to maximize impact. For nutrition education to be worthwhile, it must reach significant audiences and lead to behavioral change, conditions which in turn require feasibility studies and investments in terms of personnel and resources. The SCN plays an important role to these ends through: 1) the advocacy opportunity offered by the SCN Annual Session; 2) the expertise of the working groups; and 3) the dissemination channels offered by the SCN publications and Web site.

#### **4. Fourth-Grade Children are Less Accurate in Reporting School Breakfast than School Lunch during 24-Hour Dietary Recalls**

To compare reporting accuracy for breakfast and lunch in 2 studies. Children were observed eating school meals and interviewed the following morning about the previous day. In Study 1, 104 children were each interviewed 1 to 3 times with  $\geq 25$  days separating any 2 interviews. In Study 2, 121 children were each interviewed once in forward (morning-to-evening) and once in reverse (evening-to-morning) order, with these interviews separated by  $\geq 29$  days. 12 schools. Fourth-grade children. For each meal, food-item variables (observed number, reported number, omission rate, intrusion rate, total inaccuracy) and kcal variables (observed, reported, correspondence rate, inflation ratio). General linear mixed models. For each study, observed and reported numbers of items and kcal, and correspondence rate (reporting accuracy), were greater for lunch than for breakfast; omission rate, intrusion rate, and inflation ratio (measures of reporting error) were greater for breakfast than for lunch. In Study 1, for each meal over interviews, total inaccuracy decreased and correspondence rate increased. In Study 2, for each meal for boys for reverse and for girls for forward order, omission rate was lower and correspondence rate was higher. Breakfast was reported less accurately than lunch. Despite improvement over interviews (Study 1) and differences for order x sex (Study 2), reporting accuracy was low for breakfast and lunch.

#### **5. Eating Order: A 13-Week Trust Model Class for Dieting Casualties**

Chronic dieting distorts eating behaviors and causes weight escalation. Desperation about losing weight results in pursuit of extreme weight loss measures. Instead of offering yet another diet, nutrition educators can teach chronic dieters (dieting casualties) to develop eating competence. Eating Order, a 13-week class for chronic dieters based on Satter's How to Eat protocol, within a Health at Every Size framework, was successful for 36 women in improving eating attitudes and behaviors, body image, and self-esteem, regardless of initial degree of eating disturbance or weight. This practice model has the potential for ameliorating societal weight escalation and multigenerational struggles with eating and weight.

## TABLE OF ARTICLES

S.NO	ARTICLE NAME	AUTHOR NAME	PUBLISHED YEAR	DRAWBACKS
1	Role of Food Prepared Away from Home in the American Diet, 1977-78 versus 1994-96: Changes and Consequences	Guthrie, Joanne & Lin, Biing-Hwan & Frazao, Elizabeth	2002	It deals only with nutrition among home and away food.
2	Correlates of Fruit and Vegetable Consumption Among 11-Year-Old Belgian-Flemish and Dutch Schoolchildren	Wind, Marianne & Bourdeaudhuij, Ilse & te Velde, Saskia & Sandvik, Camilla & Due, Pernille & Klepp, Knut-Inge & Brug, Johannes	2006	It deals only with nutrition present in fruits and vegetables.
3	Nutrition Education in the Context of the United Nations Standing Committee on Nutrition Activities and Publications, 1985-2006	Engesveen, Kaia & Shrimpton, Roger.	2007	It deals only with nutrition education policy of United Nation committee.
4	Fourth-Grade Children are Less Accurate in Reporting School Breakfast than School Lunch during 24-Hour Dietary Recalls	Baxter, Suzanne & Royer, Julie & Hardin, James & Guinn, Caroline & Smith, Albert.	2007	It deals only with dietary plan for children for a day.
5	Eating Order: A 13-Week Trust Model Class for Dieting Casualties	Jackson, Elizabeth	2008	It deals only with dietary plan for 13-week routine.

## CONCLUSION

From this survey, we find that the specific web application for nutrition assistant is not present and also there are some limitations happened in the articles published related to nutrition assistant as shown in above table.

## REFERENCES

1. Guthrie, Joanne & Lin, Biing-Hwan & Frazao, Elizabeth. (2002). "Role of Food Prepared Away from Home in the American Diet, 1977-78 versus 1994-96: Changes and Consequences". *Journal of nutrition education and behavior*. 34. 140-50. 10.1016/S1499-4046(06)60083-3
2. Wind, Marianne & Bourdeaudhuij, Ilse & te Velde, Saskia & Sandvik, Camilla & Due, Pernille & Klepp, Knut-Inge & Brug, Johannes. (2006). "Correlates of Fruit and Vegetable Consumption Among 11-Year-Old Belgian-Flemish and Dutch Schoolchildren". *Journal of nutrition education and behavior*. 38. 211-21. 10.1016/j.jneb.2006.02.011.
3. Engesveen, Kaia & Shrimpton, Roger. (2007). "Nutrition Education in the Context of the United Nations Standing Committee on Nutrition Activities and Publications, 1985-2006". *Journal of nutrition education and behavior*. 39. 351-6. 10.1016/j.jneb.2007.07.012.
4. Baxter, Suzanne & Royer, Julie & Hardin, James & Guinn, Caroline & Smith, Albert. (2007). "Fourth-Grade Children are Less Accurate in Reporting School Breakfast than School Lunch during 24-Hour Dietary Recalls". *Journal of nutrition education and behavior*. 39. 126-33. 10.1016/j.jneb.2006.12.014.
5. Jackson, Elizabeth. (2008). "Eating Order: A 13-Week Trust Model Class for Dieting Casualties". *Journal of nutrition education and behavior*. 40. 43-8. 10.1016/j.jneb.2007.01.007.