



## A Calorie Count Application

<sup>1</sup>Dhananjay Khade, <sup>2</sup>Rakhee Wakhare, <sup>3</sup>Shradha Dhumavat, <sup>4</sup>Karishma Sontakke, <sup>5</sup>Prof. Mr. Pankaj Agarkar

<sup>1</sup>BE. Student, Department of Computer Engineering, D.Y. Patil School Of Engineering, Lohagoan, Pune, Maharashtra, India

<sup>2</sup>BE. Student, Department of Computer Engineering, D.Y. Patil School Of Engineering, Lohagoan, Pune, Maharashtra, India

<sup>3</sup>BE. Student, Department of Computer Engineering, D.Y. Patil School Of Engineering, Lohagoan, Pune, Maharashtra, India

<sup>4</sup>BE. Student, Department of Computer Engineering, D.Y. Patil School Of Engineering, Lohagoan, Pune, Maharashtra, India

<sup>5</sup>Research Scholar at JJTU Zhunzhuno, Raj, Department of Computer Engineering, D.Y. Patil School Of Engineering, Lohagoan, Pune, Maharashtra, India

**Abstract** — As individuals across the world have become additional curious about looking at their weight, feeding healthier and avoiding fleshiness, a system which will live calories and nutrition in daily meals are often terribly helpful. During this paper, we tend to propose a food calorie and nutrition measure system which will facilitate patients and dietitians to live and manage daily food intake. Our system is constructed on food image process and uses nutritional reality tables. Recently, there has been a rise within the usage of non-public mobile technology like smart phones or tablets, that users carry with them much all the time. Via a special standardization technique, our system uses the constitutional camera of such mobile devices and records a photograph of the food before and when feeding it to live the consumption of calorie and nutrient parts. Our results show that the accuracy of our system is appropriate and it'll greatly improve and facilitate current manual calorie measure techniques.

**Keywords-** Calorie Measurement; Deep Learning; Distance Estimation; Mobile Cloud Computing.

## INTRODUCTION

As people across the planet became extra interested in observance their weight, feeding more-healthy and avoiding blubber, a system which is able to live calories and nutrition in on a day to day meals could also be very useful. Recently, there has been an increase at intervals the usage of private mobile technology like smart phones or tablets, that users carry with them a lot of all the time. Due the unprecedented rise in over weightiness and blubber at intervals the planet and conjointly the diseases they cause, a significant issue for people to stay up an honest quality of life these days is to seem at their daily feeding routines thus on avoid excess calorie intake.

In our previous work, we've developed a mobile system which is able to live the calories of the food from that food's image taken by the user's smart phone. Once the user captures the image of the food item on the plate, the image is distributed to the cloud for food recognition and calorie computation. Food recognition is completed by deep learning running at intervals the cloud: the image is recognized in addition the } calorie details matching the image square measure fetched from the database that conjointly exists at intervals the cloud. The result is then prompted back to the user's phone. In our system, for calibration, the user must place his/her thumb near the food once the food image is taken. the weather of our system square measure shown in Fig. 1, where we've used Support Vector Machine (SVM) for image method, Map Reduce for the cloud model, and Volume calculation and finger activity for calorie calculation.

## I. LITERATURE SURVEY

1. mensuration Calorie and Nutrition from Food Image (Aug 2014)

Authors: P. Pouladzadeh, S. Shirmohammadi, and R. Almaghrabi

As folks across the planet became plenty of fascinated by look their weight, consumption healthier and avoiding avoidupois, a system which is able to live calories and nutrition in a day meals area unit usually really useful. Throughout this paper, we have a tendency to tend to propose a food calorie and nutrition live system which will facilitate patients and dieticians to measure and manage daily food intake. Our system is built on food image method and uses biological process truth tables. Recently, there has been an increase among the usage of personal mobile technology like smart phones or tablets that users carry with them abundant all the time. Via a special activity technique, our system uses the inherent camera of such mobile devices and records a photograph of the food before and once consumption it to measure the consumption of calorie and nutrient elements. Our results show that the accuracy of our system is appropriate and it will greatly improve and facilitate current manual calorie live techniques.

2. exploitation graph cut segmentation for food calorie mensuration (2014).

Authors: Pouladzadeh, Parisa, ShervinShirmohammadi, and AbdulsalamYassine.

Calorie menstruation systems that run on smart phones allow the user to need a picture of the food and live the number of calories automatically. Thus on spot the food accurately in such systems, image segmentation, those partitions an image into fully completely different regions, plays an important role. During this paper, we've a bent to gift the implementation of Graph cut segmentation as the simplest way of up the accuracy of our food classification and recognition system. Graph cut based totally technique is well-known to be economical, robust, and capable of finding the foremost effective contour of objects in an exceedingly image, suggesting it to be Associate in Nursing honest technique for separating food elements in Associate in Nursing extremely food image for calorie menstruation. Throughout this paper, we provide the analysis of the Graph cut formula as applied to food recognition. we've a bent to to boot perform kind of experiments where we've a bent to used results from the segmentation half to the Support Vector Machine (SVM) classification model.

3. Mobile cloud based mostly food calorie mensuration. (2014, July)

Authors: Pouladzadeh, P., Kuhad, P., Peddi, S. V. B., Yassine, A., &Shirmohammadi, S.

Mobile-based applications became gift in many aspects of people's lives over the past few years. Harnessing the potential of this trend for tending functions has become a amount for researchers and business, specially arising with applications which is able to use by patients as a locality of their well-being, prevention, or treatment technique. On the means that, mobile cloud computing (MCC) has been introduced to be a potential paradigm for mobile health services to beat the power issues across altogether completely different knowledge formats. During this paper, we've a bent to propose a mobile cloud-based food calorie measuring device. Our system provides users with convenient and intelligent mechanisms that allow them to trace their food intake and monitor their calorie count. The food recognition technique in our system uses cloud Support Vector Machine (SVM) coaching job mechanism throughout a cloud computing surroundings with Map deflates technique for distributed machine learning. The most points of the system and its implementation results unit of measurement recorded throughout this paper.

4. mensuration of food volume supported single 2-D image while not standard camera standardization (2012).

Authors: Yue dialect Y, Jia W, Sun M.

Food portion size live combined with a information of calories and nutrients is important among the study of metabolic disorders like avoidrupois and inherited disorder. during this work, we've a bent to gift a convenient and proper approach to the calculation of food volume by menstruation several dimensions using one 2-D image as a result of the input. This approach does not want the quality board primarily based camera activity since it's heavy in observe. the only real previous requirements of our approach are: 1) a circular instrumentality with Associate in Nursing illustrious size, sort of a plate, a bowl or a cup, is gift among the image, and 2) the image is taken beneath a cheap assumption that the camera is commonly management level with connectedness its left and right sides and its lens is inclined down towards foods on the table. we've a bent to indicate that, beneath these conditions, our approach provides a closed kind answer to camera activity, allowing convenient activity of food portion size pattern digital footage.

## II. MATHEMATICAL MODEL

### A. Design Considerations:

LET S IS THE WHOLE SYSTEM CONSIST OF

$S = \{I, P, O\}$

$I = \text{INPUT.}$

$I = \{U, Q, A, S, \}$

$U = \text{USER}$

$U = \{u_1, u_2, \dots, u_n\}$

$Q = \text{QUERY ENTERED BY USER}$

$Q = \{q_1, q_2, q_3, \dots, q_n\}$

$A = \text{ALGORITHMS}$

S = SOURCE

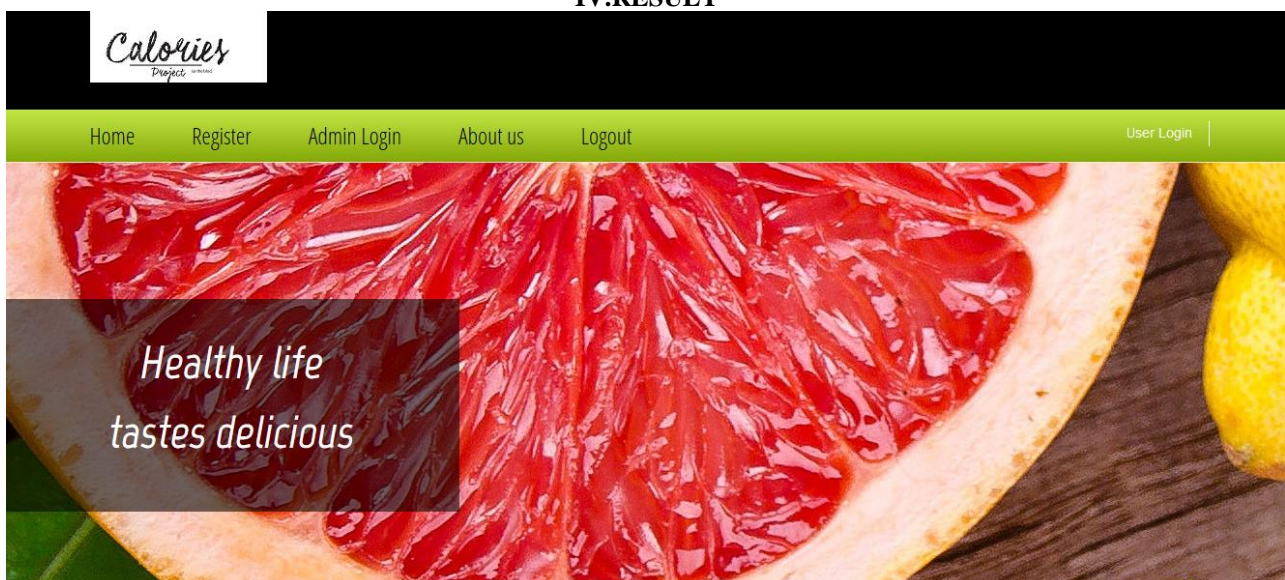
P = PROCESS:

**OUTPUT:** FINALLY THE USER WILL GET THE DETAILS ABOUT FOOD LIKE NAME OF THE FOOD AND CALORIE.

### III.IMPLEMENTATION

As shortly because the user captures the food object picture, the system measures the gap of the food object from the phones camera and records it within the info. Once he/she clicks on the submit button for calorie estimation within the EHS app, the system sends the picture and also the distance (d) information to the cloud for image process and calorie mensuration steps. Throughout the image process stage, deep learning methodology (as explained within the previous section) is applied for the feature extraction and classification method. Once the food object is recognized and classified, the system then performs the calorie mensuration step. The primary step of calorie mensuration is to access the food content and its amount, gift on the plate. We have a tendency to try this by getting contour round the food object with the utilization of canny edge detection. Once we have a tendency to get the contour, we have a tendency to area unit able to dimension the food object and any get the closed food object in plate (in grams or milligrams) and any get its calorie worth. One in every of the most challenges during this technique would be the belief that the user would continually follow the directions (like in our humanoid Application, the user must click the picture from a particular distance e.g. 50 cm). This would possibly mitigate the interest of the usability of this application. Thus to handle this downside, we have a tendency to propose a distance standardization technique, which is able to change the system to accurately calculate the calorie worth, no matter the changes within the distance from that the food object is being clicked. For doing therefore, our primary goal was to see a relentless as a point of reference, with relevance the varied distance (d). We hence, created, equal sized blocks on the image with the assistance of grid lines as shown within the Fig. 5. The blocks size would stay an equivalent for all pictures (irrespective of the gap from that the photographs were clicked). Fig. five illustrates a picture of bread once taken from a distance of forty five cm. equivalent bread is contour space of the food object. The Arc length and contour area unit obtained from opencv functions [19][20], facilitate United States verify the dimension of the food object in pixels. We have a tendency to then performed regression analysis on the contour space and also the perimeter (arc length) against the burden. commonly we might have used a scales, to calculate the food amount. As asking the user to weight the food object on the plate isn't possible in our situation, we've got projected a unique plan to access the burden of the food object gift on the plate and further verify the calorie content of the food object. supported the image of a better-known food object, if we are able to somehow calculate the dimension of this food object, given a reference point, we'll be for certain be able to get a quantitative worth of the food object, the unit that wouldn't be in grams or milligrams however rather in centimeters or feet.

### IV.RESULT



Natural and fresh goods only!  
The best agricultural technologies

## User Login

Username

Password

Login

Natural and fresh goods only!  
The best agricultural technologies

Welcome s

Click to Upload Image

Click to Capture Image

Check Face Name

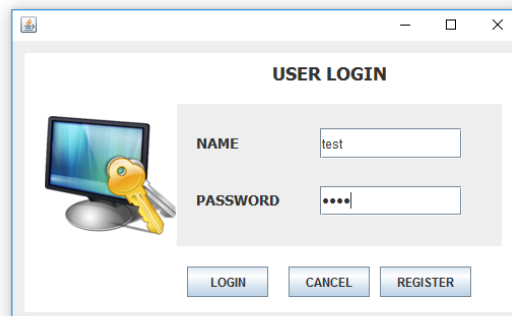
Natural and fresh goods only!  
The best agricultural technologies

Go back

Upload Image  o.jpg

Check Food Details

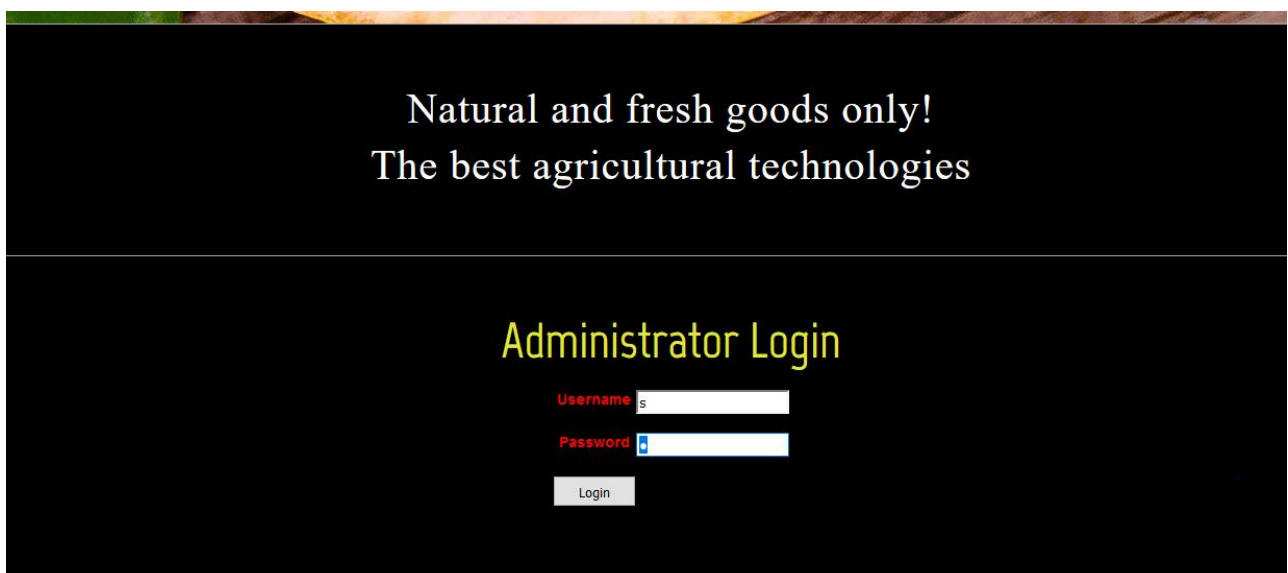
[Click to Go Back](#)



A screenshot of a 'USER LOGIN' window. The window has a title bar with standard minimize, maximize, and close buttons. Inside, there is a graphic of a computer monitor with a key on it. To the right of the graphic are two input fields: 'NAME' with the text 'test' and 'PASSWORD' with four dots. Below these fields are three buttons: 'LOGIN', 'CANCEL', and 'REGISTER'.

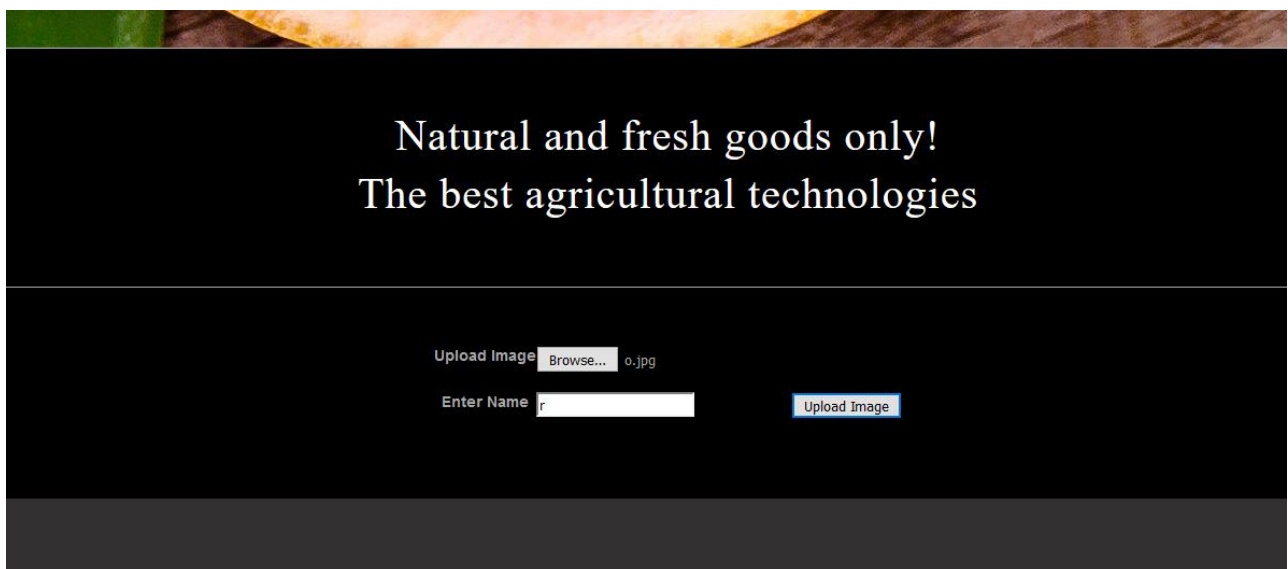
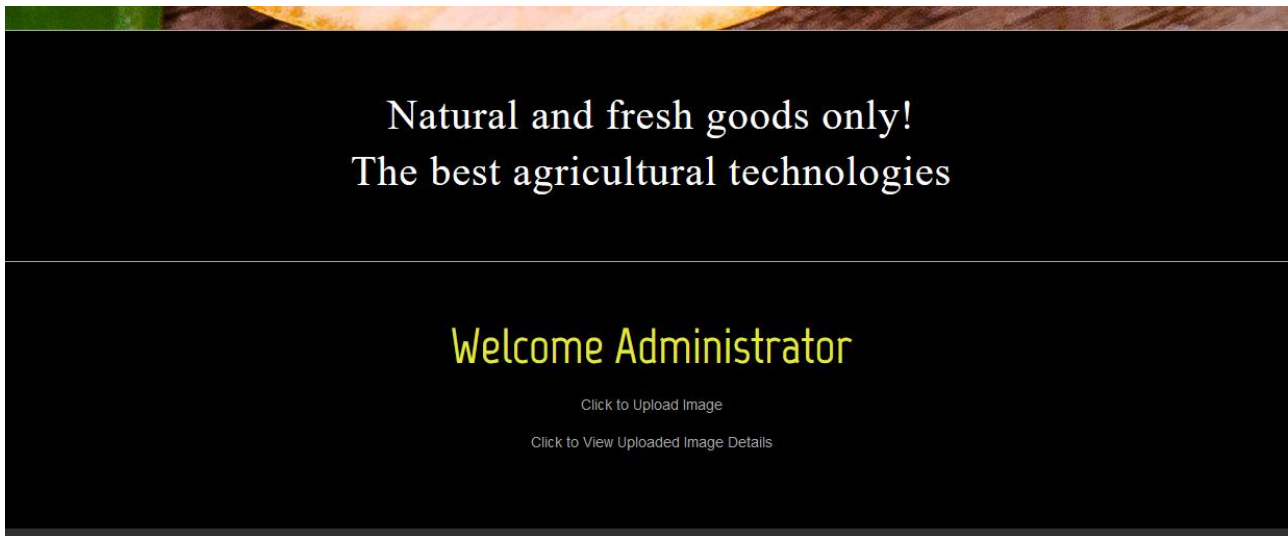


A screenshot of a window titled 'Welcome To The Auto Face Detection And Auto Naming'. On the left side, there are two buttons: 'Start' and 'Shot'. The rest of the window is a large, empty gray area.



A screenshot of an 'Administrator Login' screen. The background is black. At the top, in white text, it says 'Natural and fresh goods only!' and 'The best agricultural technologies'. Below this, the title 'Administrator Login' is written in yellow. Underneath the title are two input fields: 'Username' with the letter 's' and 'Password' with a blue eye icon. At the bottom is a 'Login' button.





back

No.	Uploaded Image	Image Name	MVAL
	img00010.jpg	kiran	0
	img00010.jpg	nilesh	0
	anu.jpg	anu	0
	img00010.jpg	amol	0
	santosh.jpg	santosh	0
	suraj.jpg	suraj	0
	puja.jpg	puja	0
	3.jpg	pooja	0
	20150314_081116.jpg	smita	0
	20150313_082746.jpg	snehal	0
	Photo0146.jpg	shilpa	0
	img00010.jpg	kkkkk	0
	img1.jpg	karan	0
	o.jpg	r	null

#### IV. CONCLUSION AND FUTURE WORK

In this paper, we've projected a replacement technique for measuring the calories of the food object. With the correct Combination of mobile and cloud computing we tend to were able to obtain the calculable distance from the mobile device and used it to method the image within the cloud. This enabled us to process all the pictures from a similar scale and further enabling us to determine the calorie price of the food object. Using deep learning we tend to were able to

extract the options of the food object and additional classify it accurately. We tend to additionally studied the relation between the realm and perimeter of the food object against the calorie price, with space being additional correct in decisive the calorie price.

As a part of the long run work, we have a tendency to believe the important dimensions of the food object may well be obtained in real time mistreatment the mobile device. Presently we have a tendency to square measure ready to acquire the space from the mobile device in period of time. We'll additionally analyze additional food categories and verify the accuracy of this technique. Mistreatment the ideas of distance estimation mentioned during this paper, we have a tendency to may additionally acquire the breadth and also the height of the food object, additional serving to US to calculate the realm and perimeter of the food object in period of time. This is able to enable US to accurately verify the calorie of the food object.

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