

Table 1: Revision History

Date	Developer(s)	Change
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# User Guide

## Utrition

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# 1 Symbols, Abbreviations and Acronyms

symbol	description
BMI	Body Mass Index
Ctrl	Control keyboard key
Utrition	Explanation of program name

# 2 Introduction

Utrition is a local web application that allows users to track their past meals, calories, and nutritional data in order to reach their health goals. This user guide lays out the steps needed for installing and launching Utrition. In addition, commonly performed tasks are outlined for users to easily refer to when using the application.

# 3 Installation

## 3.1 Prerequisites

Prerequisites for running Utrition are as follows.

- macOS or Windows operating system
- Google Chrome as default web browser
- A strong internet connection

## 3.2 Instructions

The commands specified are targeted towards macOS operating systems. If the user is installing on Windows, equivalent commands are available.

1. Create a new, easily-accessible folder for Utrition to be installed under. This folder will be used when launching the application.
2. Open a terminal inside the newly created folder.
3. Run the command “git clone https://github.com/jeff-rey-wang/utrition.git” to download Utrition on to the device.
4. Run the command “cd utrition/src/utrition” to navigate to the Utrition code folder.
5. Install all dependent packages by running “pip install numpy tensorflow pillow flask plotly dash kaleido”.

If “pip” is not installed, please follow the guide [here](#).

6. Run the command “node -v” in either terminal to ensure Node JS is installed. If there is no version returned, install Node JS by following the guide [here](#).
7. Run the command “npm install react-scripts” in one terminal.

## 4 Launch Application Instructions

Utrition is run from the command line interface. The user will need to open two terminals inside the Utrition application folder, specifically under “src/utrition”. In one terminal, the user will run “**npm start**” which will allow the front-end user interface to be displayed and connects the front-end interface to the user’s local server (<http://localhost:3000>). In the second terminal, the user will run “**npm run start-backend**” to create an unseen back-end interface on the user’s local server (<http://localhost:5000>). When both interfaces are set up, a web browser will automatically open to the home page of Utrition which is shown below. Once the user is on the home page, the application is ready for usage.

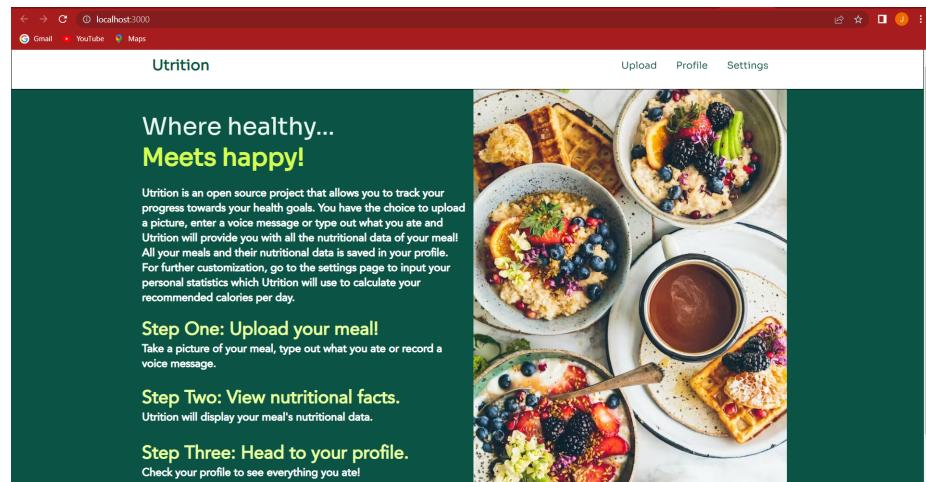


Figure 1: Home Page of Utrition

## 5 Closing Application Instructions

Once the user has finished using Utrition, the following instructions will close the application. In both terminals used to start the application, the user should press the keyboard buttons **Ctrl+C**. Once this has been done in both terminals, Utrition has been shut off successfully.

## 6 General Usage Tasks

This section details the most commonly executed user functions when using Utrition. Steps for each task are shown below.

### 6.1 Logging a Food Item

When a user wishes to upload a food item they have consumed to the application, they must navigate to the “Upload” page by clicking the “Upload” text found in the navigation bar at the top of every page. From there, the user is brought to the “Upload” page where they have the option to upload their food in one of three different ways. Each option is further explained in the following sections.

#### 6.1.1 Text Upload

Once on the “Upload” page, users must select the text upload button as shown in Figure 2. A text box will appear where the user can type in their food input.

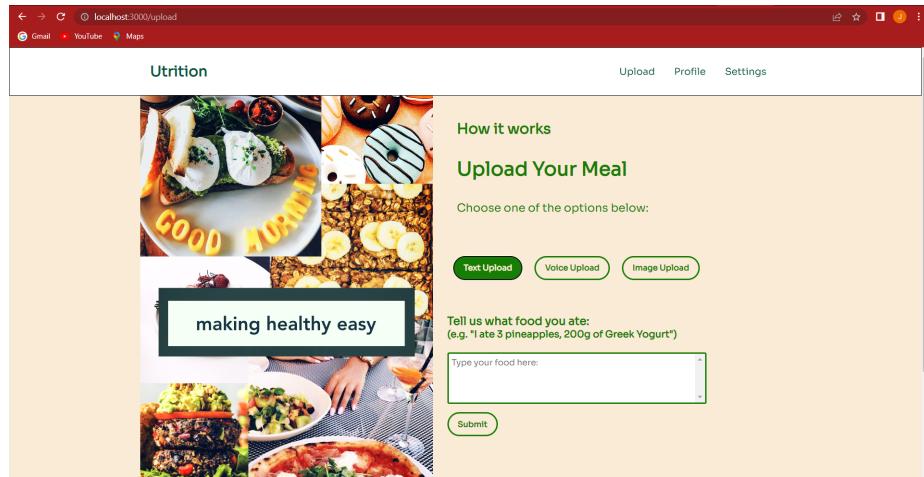


Figure 2: Upload Page with Text Upload Selected

Users have the ability to input one or more food items as well as their specific serving sizes. Once the food input has been typed in, the user must press the “Submit” button. Utrition will display the nutrition facts of the food input to the user and save the entry for the user to view later. Figure 3 shows a sample output.

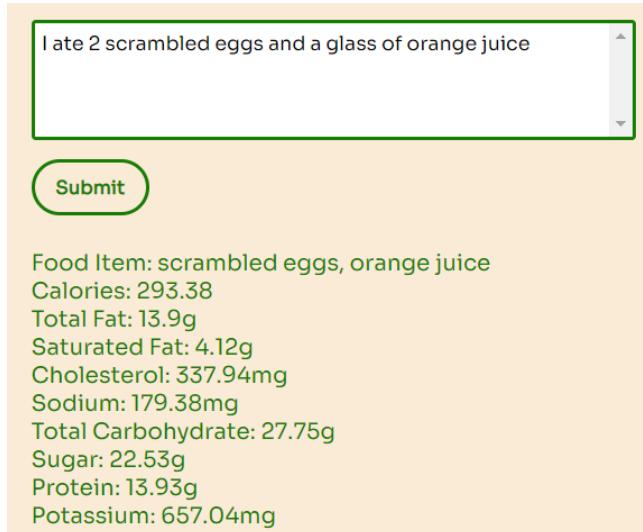


Figure 3: Text output shown by Utrition for sample food input

#### 6.1.2 Voice Upload

Once on the “Upload” page, users must select the voice upload button as shown in Figure 4. Buttons will appear where the user can commence audio tracking.

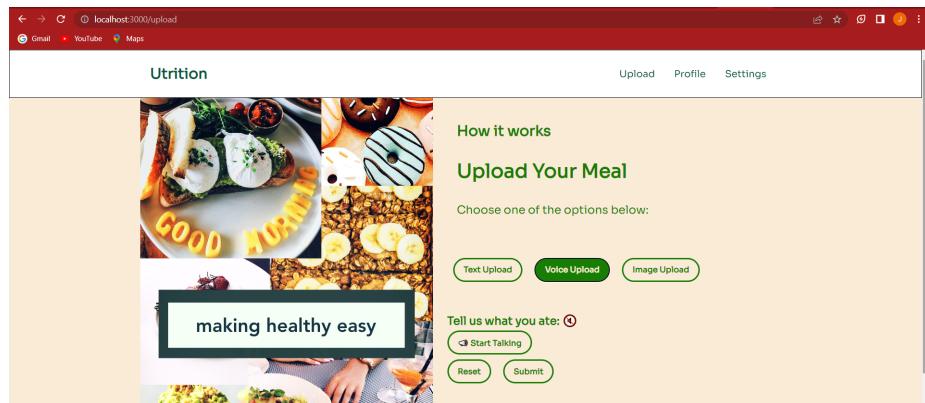


Figure 4: Upload Page with Voice Upload Selected

Once the user is ready to give their food input, they will click the “Start Talking” button and begin speaking into the device. Utrition will listen to the user’s speech and convert it to text which is displayed to the user. Once finished, the user will click the “Stop Talking” button and submit their input by pressing “Submit”. If the user wishes to give a different voice input, they can press the

“Reset” button and repeat the explained steps. Similar to text upload, users can input multiple food items and serving sizes at once. A sample output is displayed in Figure 5.

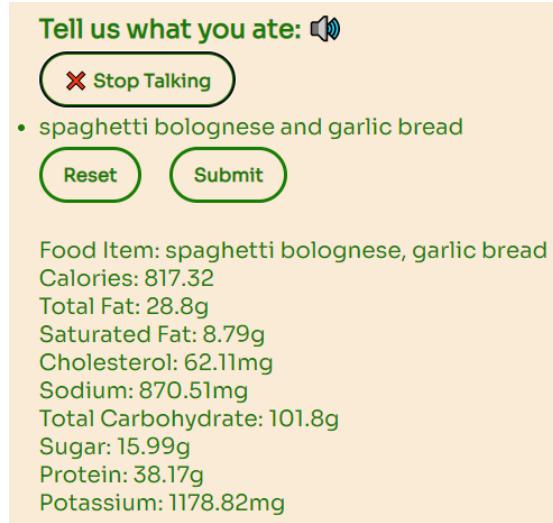


Figure 5: Voice output shown by Utrition for sample food input

Once input is submitted, Utrition will display the nutritional information for the specified foods and save the entry for the user to view later.

#### 6.1.3 Image Upload

Once on the “Upload” page, users must select the image upload button as shown in Figure 6. Buttons will appear for the user to select an existing image of a food item from their device.

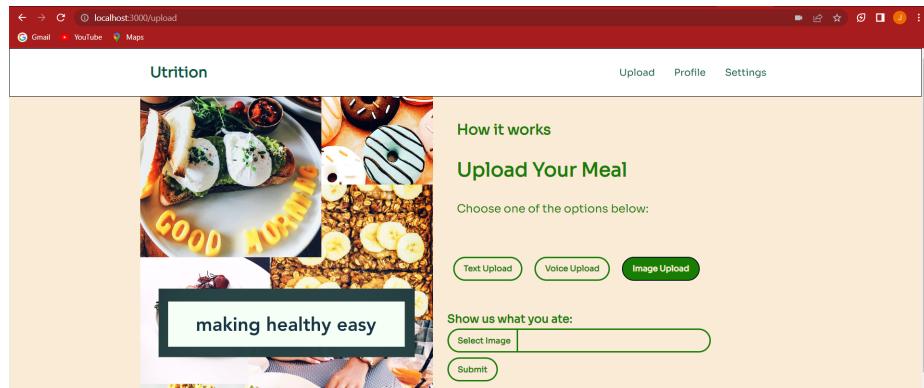


Figure 6: Upload Page with Image Upload Selected

Once the user has selected the food image that they want identified, the user will press the “Submit” button. Utrition will begin processing the image. Once identified, Utrition will ask the user if its identification of the food item is correct as shown in Figure 7.

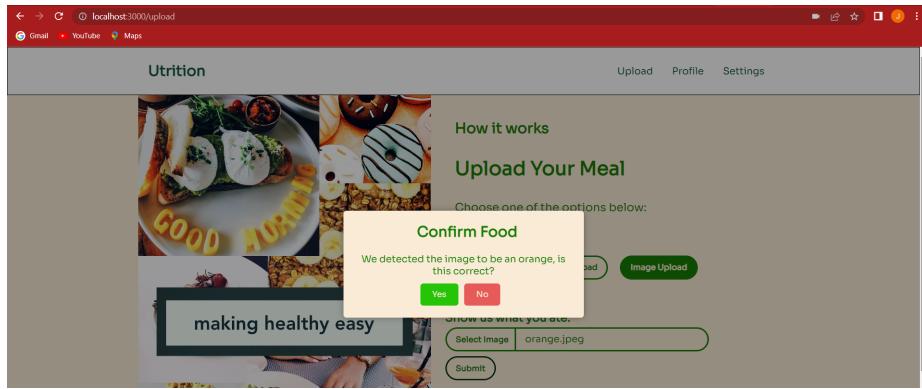


Figure 7: Confirmation of identified food

If the image is correctly classified, the user will select the “Yes” button. The interface will then show the nutrition facts of the food input and save the entry for the user to view later as shown in Figure 8. If Utrition did not identify the food correctly, the user will click the “No” button and will be prompted to upload a new image.

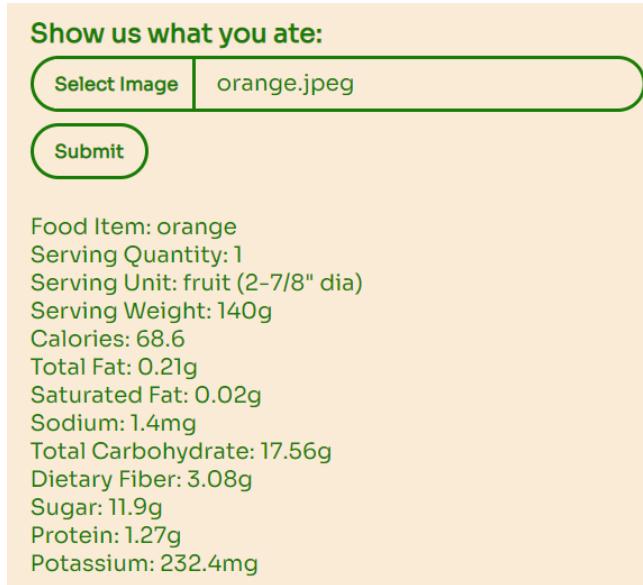


Figure 8: Image output shown by Utrition for sample food input

## 6.2 Viewing Previously Input Foods

To view previously input food items, the user will navigate to the “Profile” page. This is done by clicking the “Profile” text found in the navigation bar at the top of every page. The interface will display an interface similar to that shown in Figure 9.

The screenshot shows the Utrition profile page. At the top, there are links for "Upload", "Profile", and "Settings". The main section is titled "PAST MEALS" and lists two entries:

- Apr 04 03:53 PM**: orange  
 serving quantity: 1,  
 serving unit: fruit (2-7/8" dia),  
 serving weight: 140g,  
 calories: 68.6,  
 total fat: 0.21g,  
 saturated fat: 0.02g,  
 cholesterol: 0mg,  
 sodium: 1.4mg,  
 total carbohydrates: 17.56g,  
 dietary fiber: 3.08g,  
 sugars: 11.9g,  
 protein: 1.27g,  
 potassium: 232.4mg
- Apr 04 03:35 PM**: spaghetti bolognese  
 serving quantity: 1,  
 serving unit: serving (about 2 cups),  
 serving weight: 360.4g,  
 calories: 566.82,  
 total fat: 21.66g,  
 saturated fat: 6.52g,  
 cholesterol: 81mg,  
 sodium: 136.59mg,  
 total carbohydrate: 83.86g,  
 dietary fiber: 11.1g,  
 sugars: 10.12g,  
 protein: 34.58g,  
 potassium: 1134.53mg

On the right side, there is a summary message: "Today you have eaten 1316.5 calories out of 1622.09 calories to maintain your weight. Your BMI is 19.26, which means you are normal weight!" Below this is a table titled "My Caloric Intake" showing the user's daily caloric intake:

Date	Total Calories	What you ate
Apr 04	1316.5	orange, spaghetti bolognese, garlic bread, scrambled eggs, orange juice, oranges
Apr 01	1610.42	oranges, strawberries, cheesecake, chicken marsala, fish and chips
Mar 24	1787.66	orange, lucky charms cereal, kefir, almonds, shakshuka, eggs benedict, french toast

Figure 9: Sample Profile page

This page contains many insights into the user's eating habits. Firstly, every food item inputted by the user and the corresponding nutrition facts are displayed under the "PAST MEALS" header. Food entries are displayed in the order of most recently input. Users can press the left and right arrow buttons at the bottom of the screen to view older entries. On the righthand side of the interface, Utrition displays the user's most eaten food item, their calories for the current day, the recommended calories based on the user's personal statistics, the user's BMI, a caloric summary for each day and a graph displaying the same caloric summary information. A sample graph and caloric summary is shown in Figure 10.

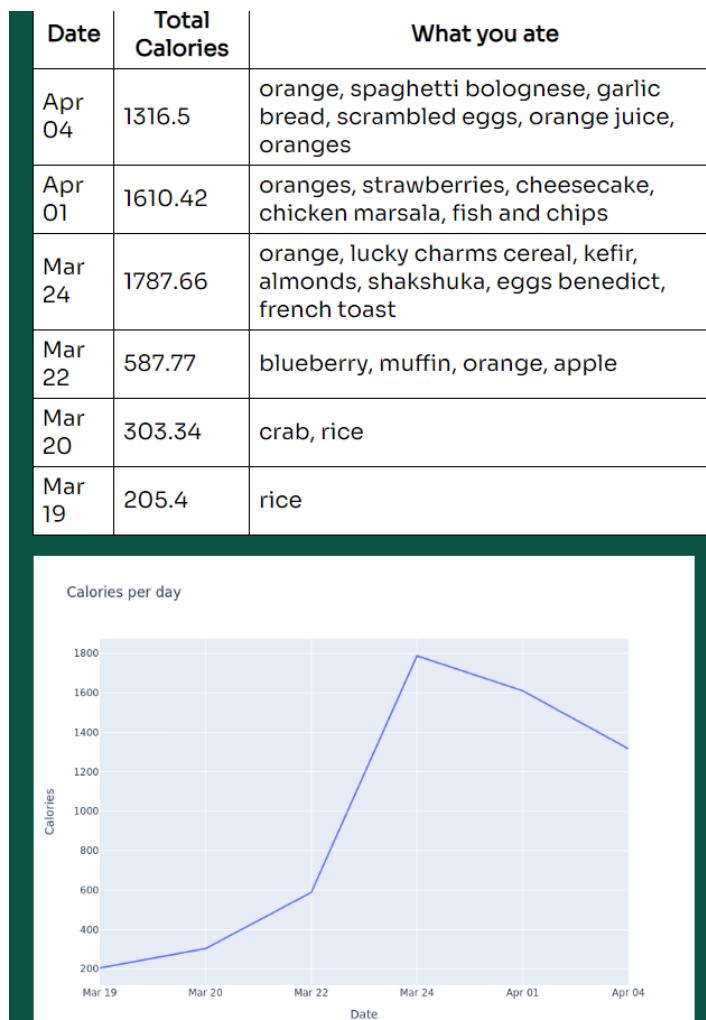


Figure 10: Sample graph of caloric intakes

### 6.3 Deleting a Food Entry

If a user wishes to delete a previously inputted food item, they must navigate to the “Profile” page. This is done by clicking the “Profile” text found in the navigation bar at the top of every page. Once on the page, the user can browse through their previously inputted food items to choose one to delete. The user will click the “Delete” button on the entry they would like removed. Utrition will prompt the user to confirm that they wish to delete the entry since deletion can not be reversed. This prompt is displayed in Figure 11. If the user selects the “Yes” button, the food entry will be removed from the user’s history.

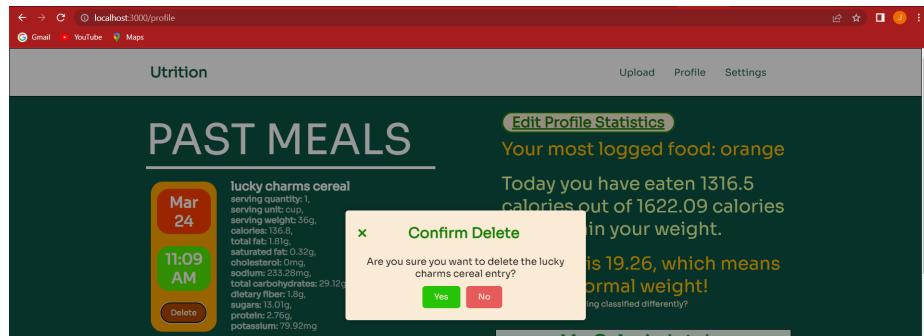


Figure 11: Prompt for deleting a food entry

### 6.4 Editing User Statistics

Users have the option to input their personal statistics into Utrition. With this information, Utrition will calculate the user’s BMI and recommended calories per day. To input user settings, users must navigate to the “Settings” page. This can be done by clicking on the “Edit Personal Statistics” button found on the “Profile” page or by clicking the “Settings” text found in the navigation bar at the top of every page. Once on the “Settings” page, the user can see the current user settings that are saved. Figure 12 shows the interface output in the case where no user statistics are saved.

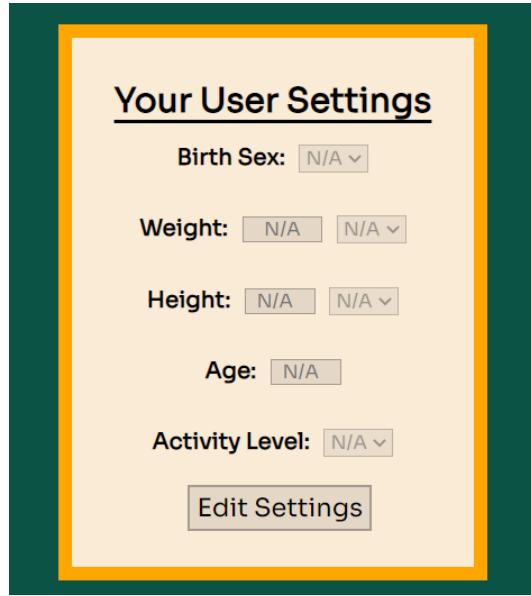


Figure 12: User settings page with no previously saved statistics

Next, users can click the “Edit Settings” button to input their statistics. This will take them to the interface in Figure 13. On this page, users must fill in the required fields. Weight can be given in pounds or kilograms. Height can be given in feet and inches or centimeters. Once all fields are filled out, the user can save their settings by clicking the “Save” button. Users can also press the “Cancel” button to exit out of editing.

Activity Level	Description
Sedentary	Little or no exercise / Desk job
Lightly active	Light exercise / Sports 1-3 days per week
Moderately active	Moderate exercise / Sports 6-7 days per week
Very active	Hard exercise every day / Exercising 2 times per day
Extra active	Hard exercise 2 or more times per day / Training for marathon, triathlon, etc

Figure 13: Edit Settings Page

Once saved, the user will be returned to the “Settings” page which will now

display the user's recently saved statistics (Figure 14).

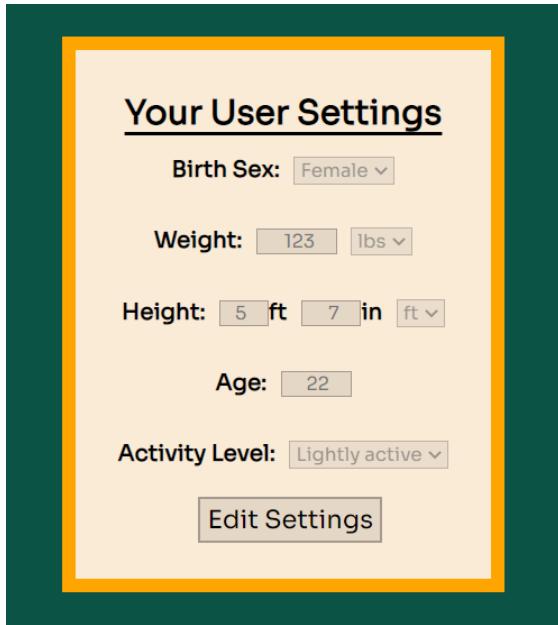


Figure 14: Updated Settings Page

## 7 Troubleshooting

The scenarios discussed below are potential issues that users may face while using Utrition. For additional issues not identified, the user should restart Utrition fully. This includes following the steps found in Section 5 and Section 4 respectively.

### 7.1 No Past Entries in Profile Page

If the user navigates to the “Profile” page and does not see any past food entries, there are a number of possible reasons and solutions. Firstly, the user should check that they ran the command “npm run start-backend” to successfully start up Utrition. If this has been done, the user should ensure that they have previously inputted food entries in the “Upload” page. Restarting Utrition should be done if both of these conditions have been satisfied.

### 7.2 No Nutritional Data Displayed Upon Input Submission

While uploading a food input to Utrition, there may be a case where no nutritional data is presented to the user. This will only occur when the user’s device

is not connected to the internet. To resolve the issue, the user must connect to the internet and resubmit their previous input.

## 8 Frequently Asked Questions

### 8.1 Why can my food image not be classified?

In some cases, Utrition will be unable to classify a food image correctly even after multiple submissions. Utrition's image classification technology was trained with a small group of foods which most likely does not contain the food in the inputted image. Utrition's developers will improve upon this feature in future code updates. For the time being, users should try inputting their food in text or voice upload to avoid this error.

### 8.2 Is my data saved to an online server?

Utrition is a completely local application. This means that all saved data including personal statistics and past food entries are stored directly on the user's device. Other Utrition users and developers have no way of accessing a user's data.