

# Food Health Classification

Flask application by Jacob Cyr

# Introduction:

- I wanted to do a project that I knew very well, Food and nutrition was an instant domain for me.
- I knew the idea was to start modelling relationships I found in tabular data.
- Using the underlying patterns in nutrition data, I can classify whether something is good for a diet or not. Specifically low carb less starchy veg was what I had in mind because it has previously worked for me.

# Goals

- My main goal was that of classification, can I tell a computer a food name and have it return back an answer if it was healthy or not.
- An additional goal was to read text from a picture and perform the same predictions based on the detected text.
- To understand how models can work together and solve larger ranges of problems.

# The Data

- Taken from Calorie Ninjas API, Transferred via Api call to a data frame.
- Contained information on calories, fiber, carbohydrates, sodium ,fats etc.
- Values retrieved, stored locally , cleaned via algorithm and loaded into a model.

# The model

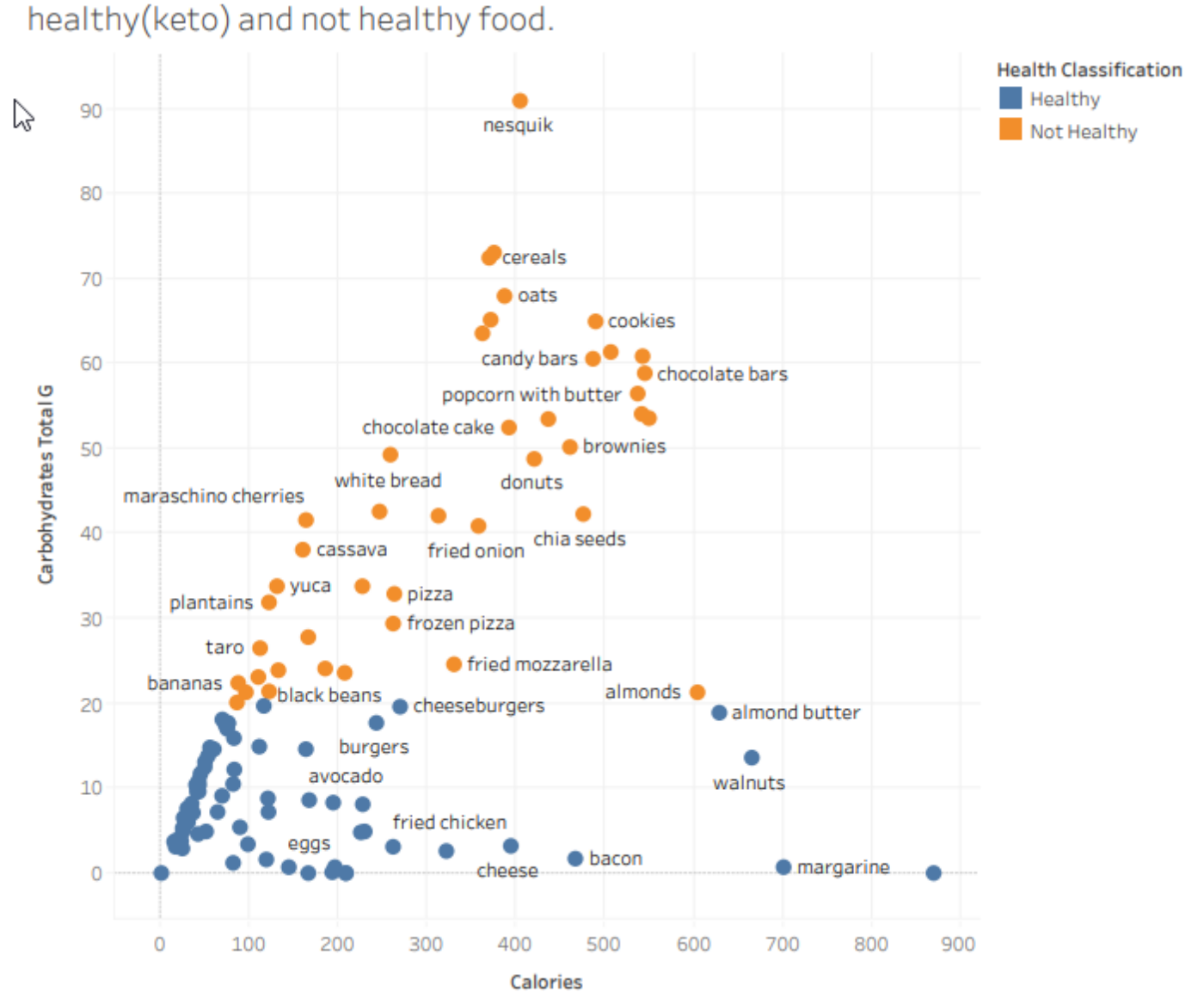
- My model is a random Forrest regressor which is a robust model that prevents against learning noise.
- Runs fairly accurate for now I expect to keep adding data and training the model to improve.
- Takes input via browser web page and instantly provides a result.

# The application

- Hosted on a flask server accessible via the web browser. Takes user input and returns a prediction using an API call, nutritional facts retrieved from the API and tested on the models classification.
- The visual label classification functionality is not functional within the app but it is accessible within the project. Here is an example.

# My findings.

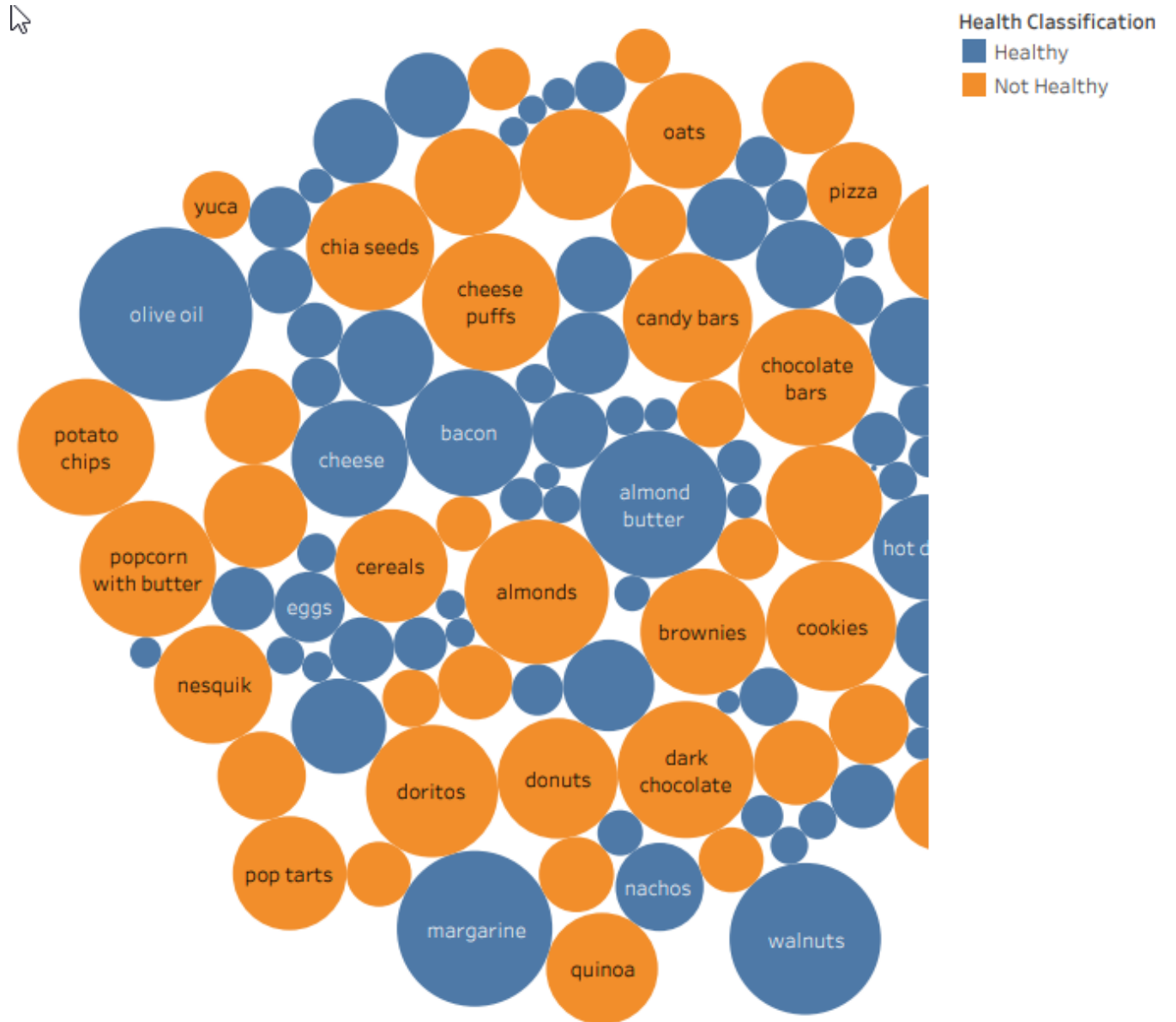
The data seems to be splitting the food types up properly, this will be good for the algorithm to learn.



# patterns

Better food grouped together, not so good food also grouped together.

Interactive dashboard to explore the data in tableau. Included in the project repository.



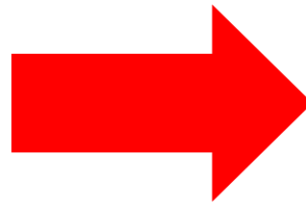


# In conclusion

- Setting up a Flask application to host my model and its work with data was a very time consuming project.
- I was able to classify most foods if they were obvious, like potato is not good for a diet and a tomato is.
- Try for yourself, Available on my github and soon AWS.

# Future.

- I hope to expand this system to other platforms and increase its functionality.
- It would be nice if it was also capable of understanding complex food ideas like gourmet dishes and food translations beyond English.



```
The food item 'salad', is 'Healthy'.  
The food item 'pizza', is 'Not Healthy'.  
  
Process finished with exit code 0
```