

Image Recognition

12/2020

Business Objective

The objective of the project is **to detect an image of a product from a catalogue*** of **Carrefour** and match it with the product in the referential.



Or a list of similar products that are close to the nature of the product

What you can expect from us?

Datasets

- **Product Images associated with the barcode**
 - We have only few angles of each product. It needs to consider generating augmented images.
- **Product referential for those barcodes**
 - Product information, hierarchy etc.

Technical Support

- A jupyter notebook created on Google Cloud Platform for your simulations
- A Data Scientist from Carrefour to answer or support in case if you have any questions



What we expect from you?

We expect from you a **state of the art algorithm with a better accuracy** in detecting the products.

The algorithm should be capable of augmenting the dataset and also be capable of detecting an image if the image is taken from a physical catalogue.

The choice of the algorithm is up to you. But it has to be justified in the context of the data.



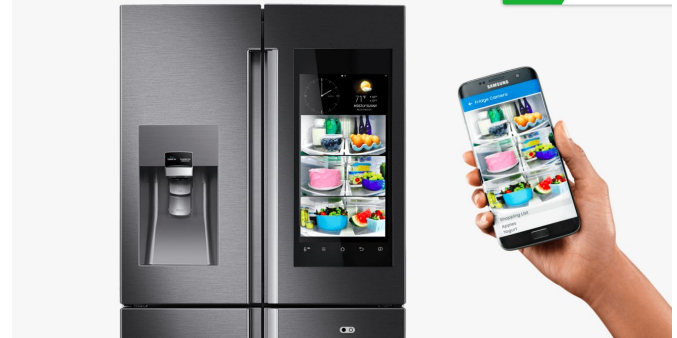
Examples of use case

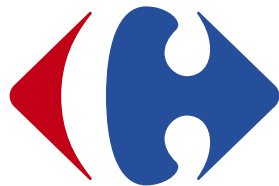
Shopping list

- Add products from pictures taken by customers phone
- Quicker experience for basket conception

Connected fridge

- Be able to recognize missing products in a fridge
- Identify the missing category





DATA DESCRIPTION



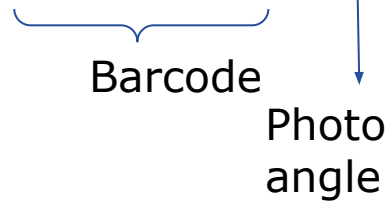
D

Data Description

We will be giving you the images (100GB) and their respective metadata

File name format. (*image_{barcode}_{photo_angle}_{random_seq}.jpeg (or .png)*)

image_5449000052179_1_12b8bbc0.jpeg



All possible angles are:

Avant	: 1, 11, 31,
Gauche	: 2, 14, 15, 32
Droite	: 3, 23, 24, 25, 35
Dessus	: 4, 6, 17, 18, 19, 26, 27, 28, 33, 36
Arrière	: 5, 20, 21, 22, 34
¾	: 7, 12, 13, 16
Autre	: 8, 9, 10, 11, 29, 30



Data Description - Metadata

Column	Description	Example
Barcode	Actual barcode that we see on the product (Unique)	3228021950051 (13 digits)
item_dec	Item description	Fromage Petit Brie PRESIDENT
brand_name	Brand name of the product	PRESIDENT
nature	Nature that was defined in the referential to identify it's nature	fromage
packaging	Description of the packaging	la boite de 500 g
arbonodes.is_primary_link	Sometimes the products is being listed into multiple categories Rayons on the website. This flag to say which one is primary	true or false
arbonodes.nodeid[1-4]	A unique identifier given to each rayon on the website	28127
arbonodes.level1	Description of the rayon displayed	Check next slide
structHyp	Different Nomenclature defined for hyper markets	



Arbonodes

An arbonode is an element using which we classify the products into different categories on the website. You can find these details for each product in the metadata table on BigQuery.

**Level
1**

**Level
2**

**Level
3**

**Level
4**

Accueil > Rayons > Frais > Fromages à déguster > Camemberts, Coulommiers et Bries > Bries > Fromage Petit Brie PRESIDENT



Fromag
PRESIDE
la boîte de 5

4,85€

9.70 € / Kilogram

Hyper Market Nomenclature

All the products in an hypermarket won't be available to shop on the website. So we have a different nomenclature for products in hypermarkets. The following is the hierarchical classification of the products which you can also find in the metadata.

