

Business case

DASC2 Project

Our task is to identify and classify the fruit or vegetable shown in a picture. Over 90000 images of various fruits and vegetables make up the dataset, which has already been divided into a training set and a test set. There are 131 classes in total. The size of one image is 100 x 100 pixels.

Dataset: <https://www.kaggle.com/datasets/moltean/fruits>

How the project may apply to the business?

The objective of this project is to support the food industry, specifically the supermarkets and help make the customer experience easier and more comfortable.

For example, when customers buy fruit or vegetables in the supermarket, they need to place the items on a scale and select the specific fruit on the screen. The scale gets the weight of the selected items and prints out the barcode. By doing this, the customers may face many problems.

Some supermarkets do not have a switch to multiple languages in the system, which may lead customers to have a hard time finding the corresponding item name.

It takes time to find the items, which leads to overcrowding in the checkout lines.

Old people may not know how to search for items in the system.

Sometimes it is hard to find out what exactly the product is or we forget (which kind of apple, banana or if it is an orange or mandarin).

Another scenario that the application should be able to do is to isolate the one product that we want to scan in a group of multiple products or in our hand (or inside a bag).

Also, it could detect if the product is in a good or bad state so that we can isolate the bad ones from the ones we want to buy or the supermarket employee can do that beforehand.

After the successful completion of this project, all these issues can be resolved which adds value to the customer. For the store, it may bring more loyal customers and more customers overall which will help in increasing the revenue of the business.

The steps will be very simple for everyone to follow.

First, the customer just needs to place the items on the scale and scan the item with a camera. The system will detect the image of the item and clarify which type of fruit or vegetable it is. The system transfers the data to the machine then it will print out the barcode for the customers. The Application will use classification neural networks for image recognition and possible frameworks or libraries available.