# Overview of the approach

In this iteration we have focussed on identifying the **category** of clothing in pictures and gone a little further by trying to extract additional features about them which we refer to as **attributes**. Attributes may be the type of material used , a style based identifier or a tag to mark what a piece of clothing is definitely not.

Take a look at the **category labels** **,** it covers a wide range of clothing wherein there are mainly three category types which are **upper body- 1**, **lower body- 2** and **full body- 3**. There are more specific labels for each category type which can be seen in the excel file shared.

The labels for **attributes** are available too where the main types used are based on **design - 1, sleeve type - 2, features of a dress - 3, type of neckline - 4, material - 5, fit type - 6.** Please take a look at the file for the labels under each attribute type.

Both of these are adjustable based on uniqlo's requirements, these are what I thought might be important for us to be able to identify.

Let's get started!

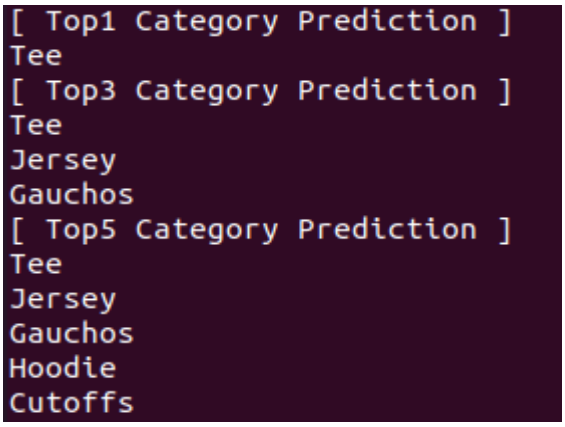
# Example 1

We first try to identify a pile of tees in a picture. If you remember our last result, something like this wasn't rightly identified as a piece of clothing.

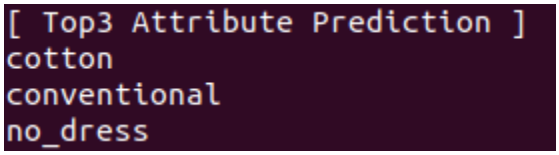
```
[ Top1 Category Prediction ]
Tee
```

However, now we are able to get an idea of the specific kind of clothing. Here the category prediction - **Tee** is correct.

The full results for category predictions can be seen below. Top 3 and Top 5 predictions are nothing but all the plausible predictions done by the model. This could be used in scenarios where there are more than one type of clothing in the picture.




After being able to predict the right category we go on to predicting other attributes. We use a different model which is able to catch features like **material type - cotton**, **fit type - conventional**, features of a dress - **no_dress**. The label no_dress might be redundant here because we already know it is a tee.

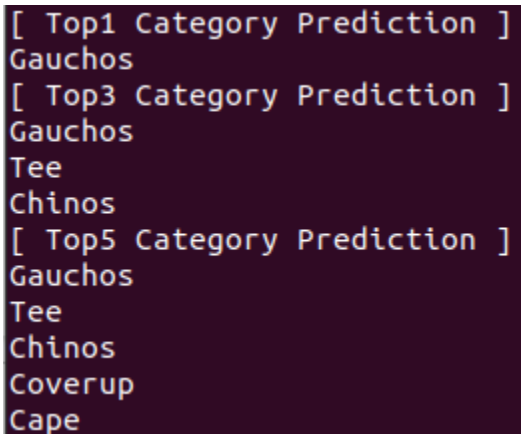


# Example 2

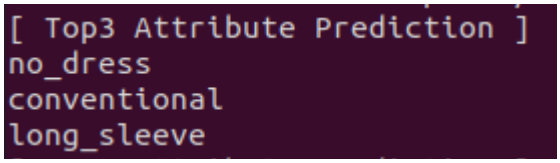
Here we try a picture which has a combination of upper and lower body clothing. This illustrates when top-3 or top-5 predictions may come in handy.

```
[ Top1 Category Prediction ]
Blouse
[ Top3 Category Prediction ]
Blouse
Cardigan
Blazer
[ Top5 Category Prediction ]
Blouse
Cardigan
Blazer
Dress
Tee
```

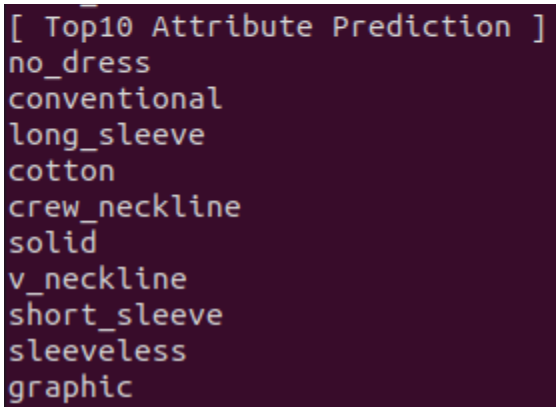
The model gets the upper body category right - **blouse.** This result would have been better if in the top 3 it was able to catch chinos as well instead of blazer or cardigan. Another model is tried with the hope of getting the lower body category right. While it does identify **chinos** in the top 3 list, it doesn't get the upper body category right**.**




When it comes to the attributes the model gets some good features like the **fit - conventional** and **sleeve type - long_sleeve** as can be seen below.




The extended list of top 5 and top 10 attributes capture additional attributes like **type of neckline - crew and v, design - solid, material - cotton.** The attributes towards the bottom start becoming inaccurate however it would have been better if v_neckline was higher up on the list before crew_neckline. Also, the material may be cotton or chiffon but even as a human it is hard to tell what it might be, any guesses?



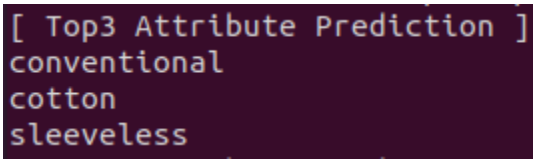
# Example 3

Here we try one with a full body clothing category and this is a picture from the uniqlo catalogue itself.

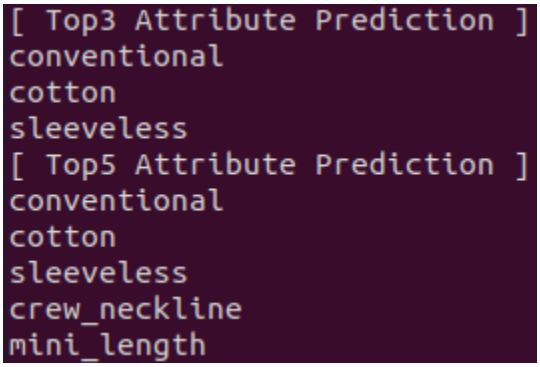
```
[ Top1 Category Prediction ]
Dress
[ Top3 Category Prediction ]
Dress
Romper
Jumpsuit
[ Top5 Category Prediction ]
Dress
Romper
Jumpsuit
Skirt
Tee
```

The model gets it absolutely right in the top 1 list - **Dress**! Now, what attributes would we want to know about this dress?

In the results below we are able to predict useful attributes about the **fit - conventional, material - cotton, sleeve type - sleeveless.**




In the extended list we are able to get predictions about the **length of the dress - mini_length** and **neckline - crew_neckline** as well.




## Coming up - Flannel shirts example 4 !