**Using Google’s ML Kit for face recognition**

Why not to use the Google ML Kit to recognize faces?

Well, actually the Google ML Kit does provide face detection, but it does not provide face recognition.

First step, the face is detected on the input image.

Second, the image is warped using the detected landmarks to align the face [4] (so that all cropped faces have the eyes in the same position).

Third, the face is cropped, and properly resized to feed the recognition Deep Learning model. Also some image pre-processing operations are done in this step (e. g. normalizing and “whitening” the face)

Fourth, the most “juicy part”, is the one depicted as “Deep Neural Network”. We are going to focus more on this step.

The main idea is that the deep neural network DNN takes as input a face F and gives as output a D =128 dimensions vector (of floats). This vector E is known as embeddings. This embeddings are created such as the similarity between the two faces F1 and F2 can be computed simply as the Euclidean distance between the embeddings E1 and E2.

Simple, right?

* We can now compare two faces **F1** and **F2**, by computing its Similarity, and then check it against some **threshold.**If lower we can say that both faces are from the same person.