**Facial Keypoints Detection**

Approach 1:

Approach 2: Image Patches.

In this algorithm, we make use of the richness of our training data, with 7049 rows and 30 variables. 30 variables are the ensemble for the 15 coordinates for the 15 facial keypoints.

To explain this procedure, let’s take left\_eye\_center as an example. The idea is to extract a patch around this keypoint in each image, and see how the location of this keypoint in this patches looks like, and average our result across this column. Then we apply this result to our test data.

Each number in **img.train**: each number represents the intensity of a pixel in the image.