

# Face Detection

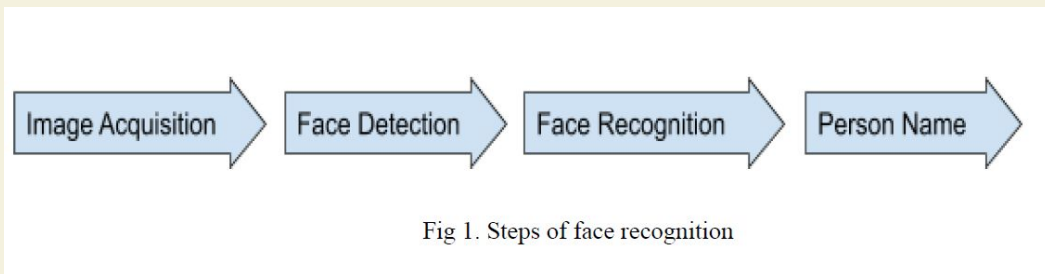


Fig 1. Steps of face recognition



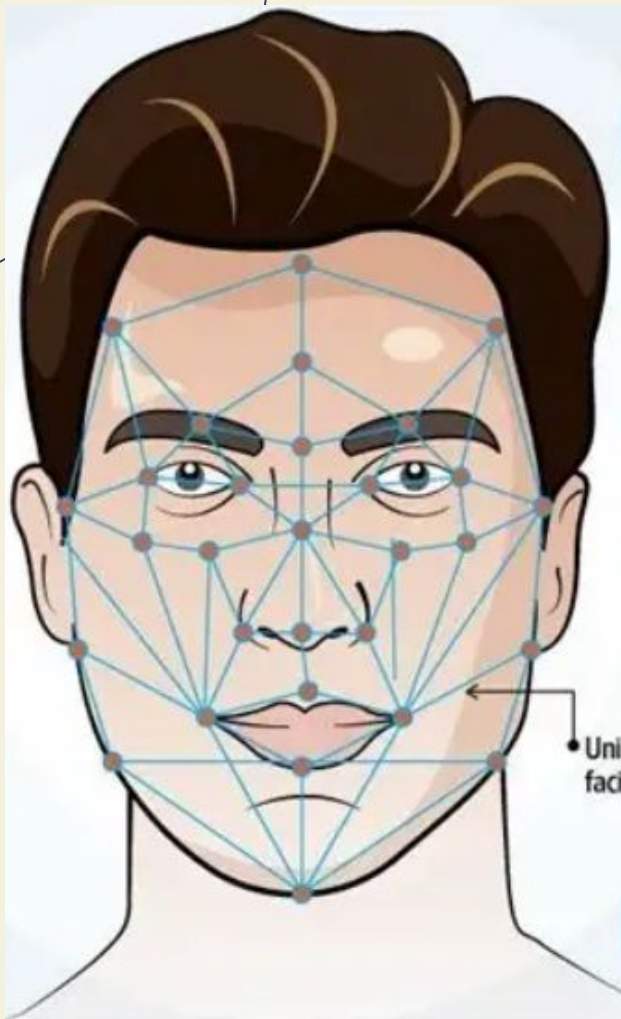
Input



Output

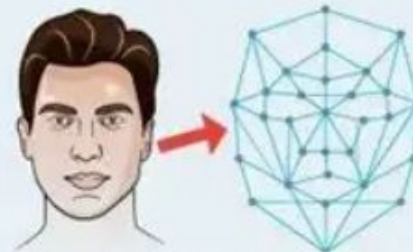
# Problem Statement

<https://www.kaggle.com/datasets/jessicali9530/lfw-dataset>



### Face Detection

Locate the user's face in the image and delimit it with a bounding box



### Visual Feature Extraction

Extract features from the face that can be used for the recognition task



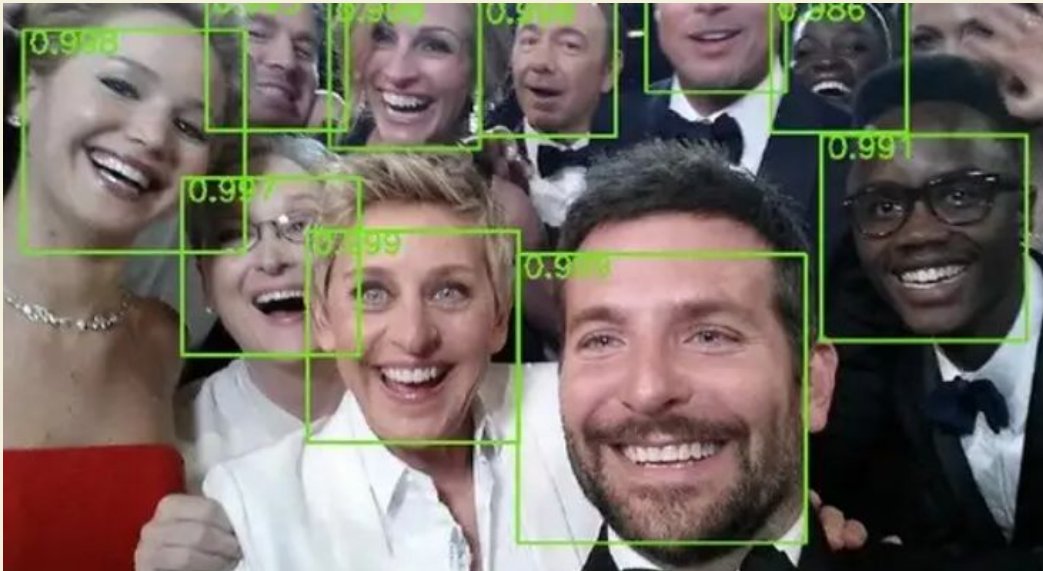
### Face Recognition

Make a face match with a database of vectors representing the visual features of the stored faces



# Step 1

**Face Detection** - Is an object recognition problem, which purpose is to locate the user's face in the image and delimit it with a bounding box.



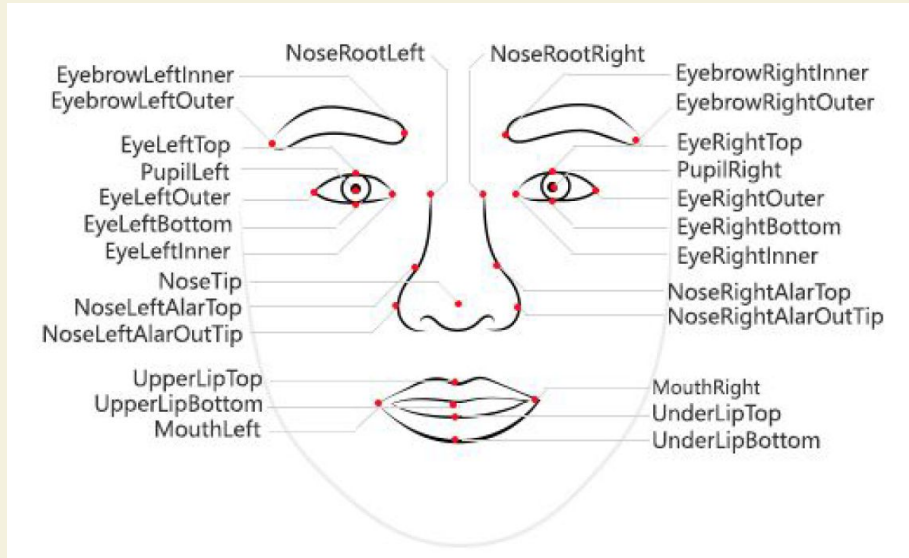
# Step 2

**2. Face Alignment.** Normalize the face to be consistent with the database, such as geometry and photometric.



# Step 3

**3. Feature Extraction.** Extract features from the face that can be used for the recognition task. it's based on the convolutional network and autoencoders to shrink the feature vector. [Age, Gender, Emotion and Race]



# Application

**Face Verification** "Is this the claimed person?" For example, at some airports, you can pass through customs by letting a system scan your passport and then verifying that you (the person carrying the passport) are the correct person. A mobile phone that unlocks using your face is also using face verification. This is a 1:1 matching problem.

**Face Recognition** "Who is this person?"

Real Life Problem - In Marriage Photography, All Photos will be Analyzed and Classified according to Different Faces Recognized.