

# E-Sketch Drawing of Wanted Terrorist Using Composite Software Implementation in Python

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**Abstract:** In this work we introduce sketch drawing using computer system, Most of the Indian police station used physically Hand drawing system. Types of sketch as Composite sketches, and Forensic sketches. Composite sketches: which are generated with a help of some face composite software. the main objectives is Sketches used in forensic Investigation, System drawing faces component match with clustering and k-means algorithm. K-means clustering is a type of unsupervised learning, using python Image Blending function we design software.

**Keywords:** Composite sketches, Python , K-means, Software, Blend.

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## 1. Introduction

In this work we introduce sketch drawing using computer system. Most of the Indian police station used physically Hand drawing system. Sketch drawing is the only way to identify criminal person with the help of witness. But most of the police station criminal person sketches not match likeness and originality of person. At police station drawing is to find criminal person so drawing is called as victim. the task of drawing likeness remain difficult since large part of it is dependent of memory of eyewitness. Skilled forensic artists are used to draw the sketches of the suspect with verbal description provided by the eyewitness. These sketches play a very important role in investigation process. Prepared sketches are sent to investigation agency to further carry out the investigation and to catch the criminal. There are mainly four kinds of facial sketches used in the sketch matching research. Facial sketches are commonly used in law enforcement to assist in identifying suspects involved in a crime when no facial image of the suspect is available at the crime scene

(1) **Viewed sketches:** By directly looking at the person or his/her photo sketches will be created. Viewed sketch quality will be higher when compared to other sketches

(2) **Semi forensic sketches:** These kinds of sketches are drawn by sketch artist based on his/her recollection from photo image of a person

(3) **Forensic sketches:** which are drawn by obtaining eyewitness's description about the suspect

(4) **Composite sketches:** which are generated with a help of some face composite software. This software provides a predefined set of human facial components. Based on witness description of the suspect individual face components are selected and merged together to form a facial image

E-sketch drawing system depends on inputs but sketches are drawn with help of patterns so at time one to up to five sketches draw by using system with patterns matching. System database

- **mode** – The mode to use for the output image.
- **bands** – A sequence containing one single-band image for each band in the output image. All bands must have the same size.

contains human body parts and its different patterns. Those matches with witness collective features. System patterns include the eye, nose, foreheads , hair patterns , cheeks, chins, mouth, ears. Witness includes CCTV camera footage, Person, Camera Photo etc. E-sketch drawing system also useful for NCRB (National Crime Records Bureau), System also provides marketing strategy means how to published criminal person sketch.

## 2. Objectives

1. Sketches used in forensic Investigation
2. There is need for the method that can automatically and quickly match facial sketches to large police database
3. Comparison of holistic facial representation and component based representation
4. Systems provides minimum five matching faces
5. System drawing faces component match with clustering and k-means algorithm
6. System provides marketing and published strategy

## 3. Methodology

K-means clustering is a type of unsupervised learning, which is used when you have unlabeled data (i.e., data without defined categories or groups). The goal of this algorithm is to find groups in the data, with the number of groups represented by the variable  $K$ . The algorithm works iteratively to assign each data point to one of  $K$  groups based on the features that are provided. Data points are clustered based on feature similarity. The results of the K-means clustering algorithm are:

1. The centroids of the  $K$  clusters, which can be used to label new data
2. Labels for the training data (each data point is assigned to a single cluster)

## 4. Python Blend Function

The Image module provides a class with the same name which is used to represent a PIL image. The module also provides a number of factory functions, including functions to load images from files, and to create new images.

```
from PIL import Image
im = Image.open("face.jpg")
im.rotate(45).show()
```

Merge a set of single band images into a new multiband image.

## 5. Example –Input Parameter based on Victims

### 1. Types of Nose:

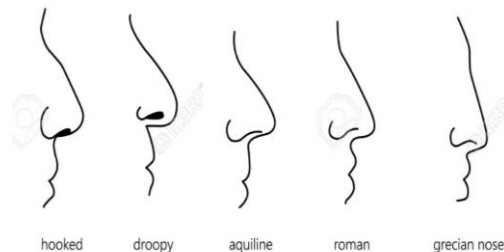


Fig. 1.2

## 2. Types of Eyes

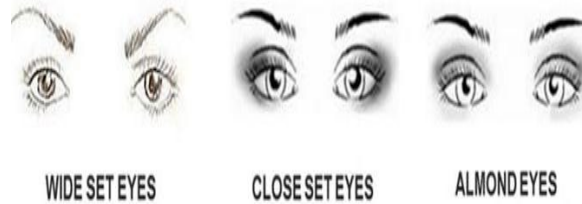


Fig 1.3

## 6. Software Outcome

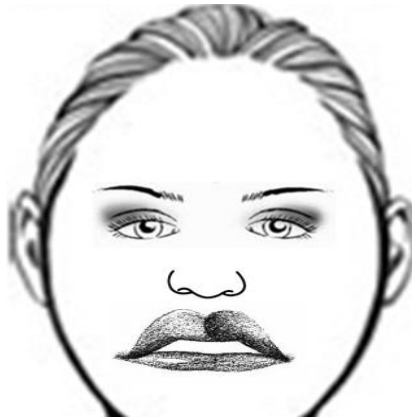


Fig.1.3

Figure shows that how clustering algorithms works in Component based database. Figure divides in three parts like a,b,c etc.

- 1] part a represents actual image from CCTV footage /camera witness
- 2] part b works with face draw by artist
- 3] part c is system generated image

classic use of the facial composite is the citizen recognizing the face as an acquaintance, there are other ways where a facial composite can prove useful. The facial composite can contribute in law enforcement in a number of ways:

1. Identifying the suspect in a [wanted poster](#).
2. Additional evidence against a suspect.
3. Assisting investigation in checking leads.
4. Warning vulnerable population against serial offenders.

Facial composites of various types have been used extensively in those television programs which aim to reconstruct major unsolved crimes with a view to gaining information from the members of the public

## 7. Conclusion

Victim person is the input to the composite system. Based on victims inputs software display sketches to search and find terrorist on less time .using Python Image processing Blend and

Combine Nose, Eyes, Lips images on One face and finally create Terrorist Sketch using Composite software.

### 8. References

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