
Day 2: Facial Recognition

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Hall of Fame

**Examples of when facial
recognition is used?**

Facial Recognition can be found:

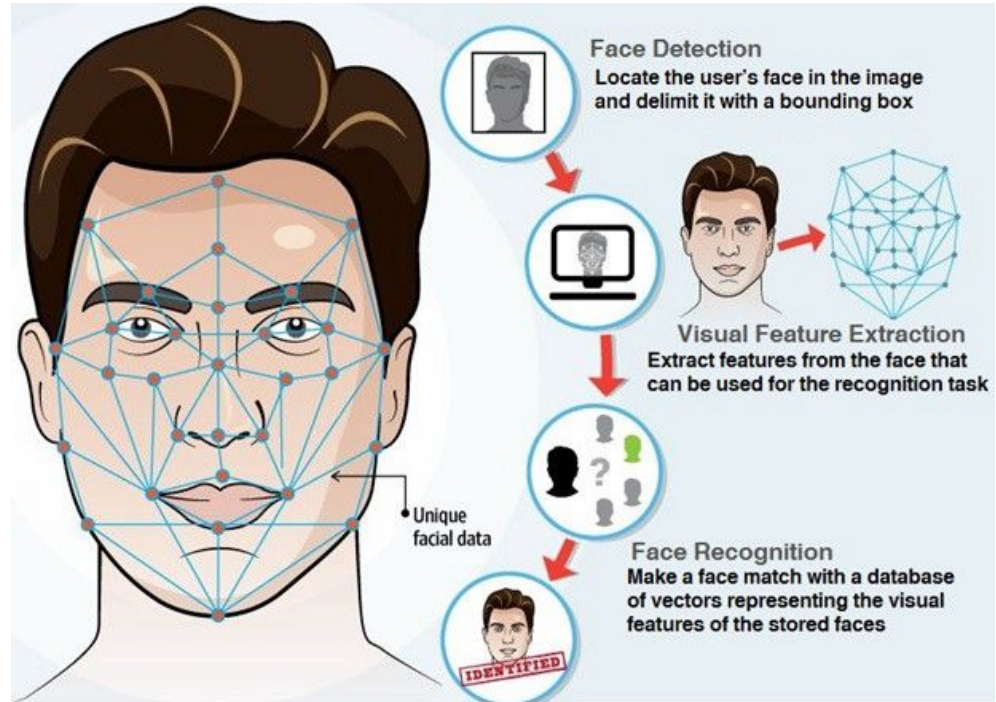
- Video surveillance
 - Stores
 - Gas stations
 - Red light cameras
 - Airports
- iPads, Smartphones
 - Snapchat filters
 - Face ID
 - Facebook tagging

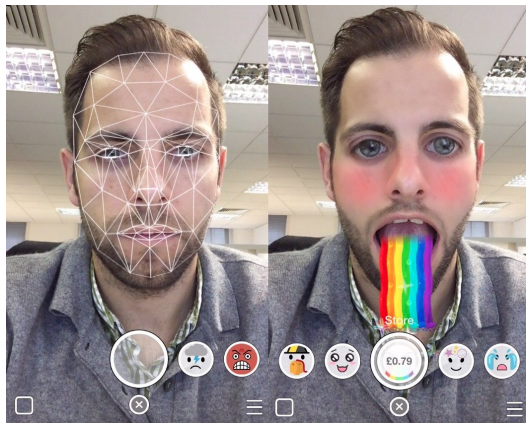
Facial recognition in video surveillance can be used to help find missing people, or criminals.

Facial recognition in technology like smartphones and ipads make opening devices easier and quicker than using a password

Steps to Facial Recognition

1. Face detection
2. Feature extraction
3. Facial recognition



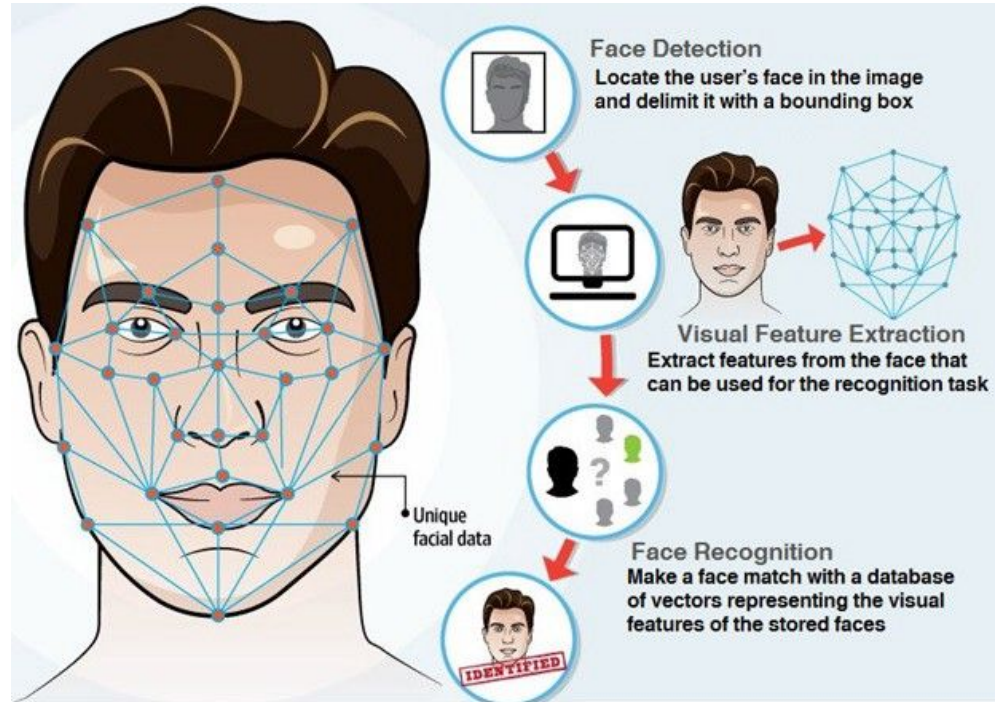


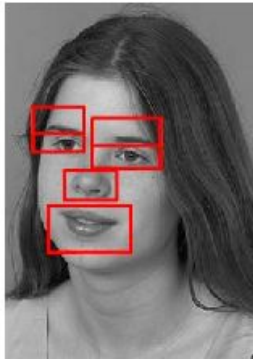
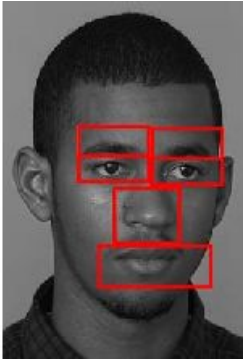
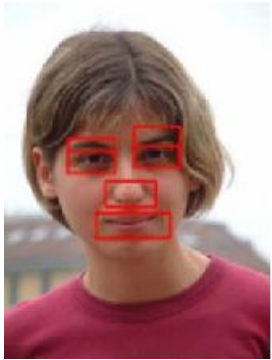
Face Detection

Find the face in our image or camera view

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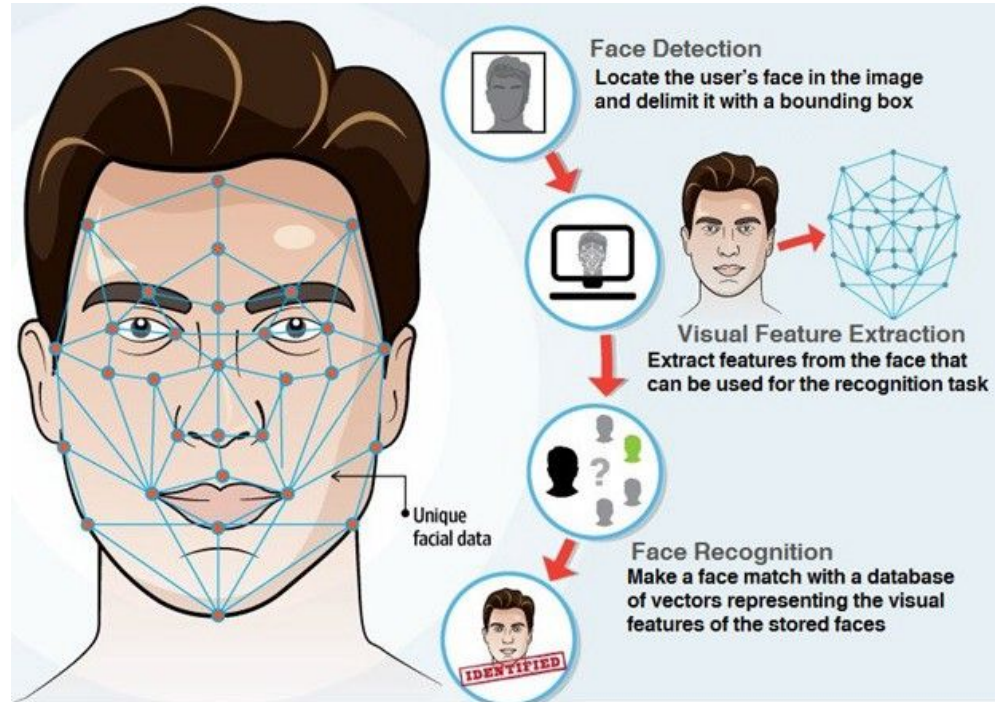


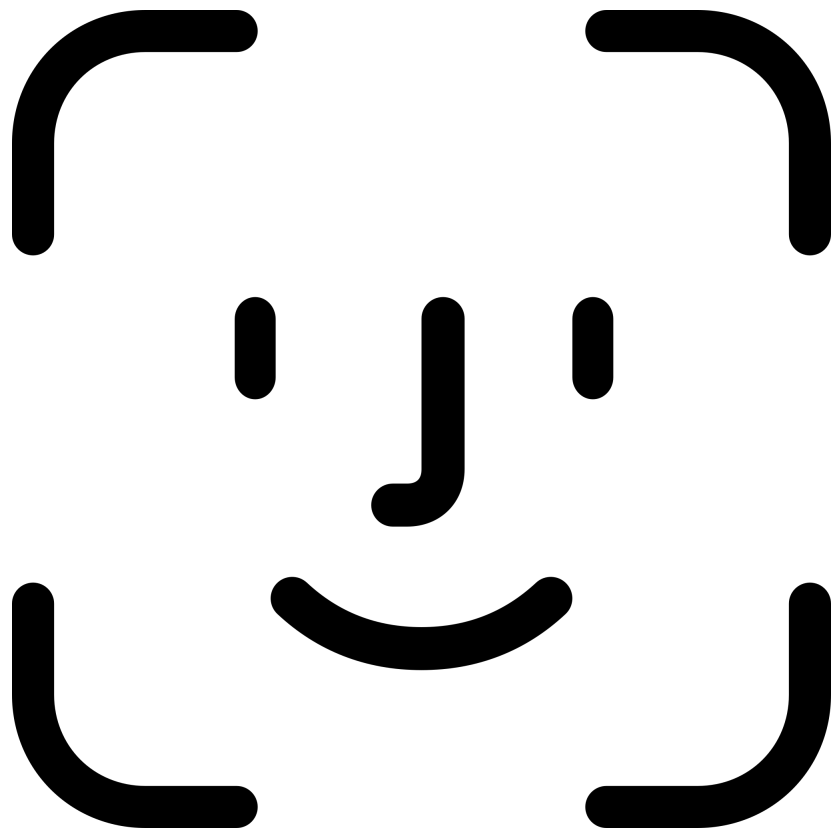
Feature Extraction

Create a list of features found in the face detected

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Facial Recognition

Make a face match by comparing features extracted with the given face



Feature based model



Eye color

Eye shape

Face shape

Eyebrow shape

Nose shape

Partner Activity

- Find a partner
 - Take your cartoon character and write down 4 facial features your character has that would be detected during the feature detection process
 - When you are done raise your hand, a teacher will come around to see your 4 features
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Coding activity

<https://bit.ly/3cgyIV3>

Face ID: Write a facial recognition program for your character's phone in python to process user input and grant access if the detected features match.

```
# Bart Simpson
def facial_rec():
    #Feature 1
    eye_color = input("What is your eye color? ")
    bart_eye_color = "black"
    if eye_color == bart_eye_color:
        print("Feature Match")
    else:
        print("Access Denied")
    return
```

Starter code:

Think of your cartoon character and their features. Write a program hard coded for them that asks the user for user input and if the user input matches for all features of your cartoon print “Access granted”, otherwise print “Access denied”

Homework

- Talk to someone and explore what tech they use most and the benefits and downsides of those technologies.
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