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## **Emotion Monitoring Based on face Recognition**

Humans have always had the innate ability to recognize and distinguish between faces. Now computers are able to do the same. This opens up tons of applications. Face detection and Recognition can be used to improve access and security like the latest Apple Iphone does (see gif below), allow payments to be processed without physical cards — iphone does this too!, enable criminal identification and allow personalized healthcare and other services.

**Update version 3.0**

Facial Biometric divided into 3 parts :

1. Facial Detection — Ability to detect the location of face in any input image or frame. The output is the bounding box coordinates of the detected faces
2. Facial Recognition — Compare multiple faces together to identify which faces belong to the same person. This is done by comparing face embedding vectors
3. Emotion Detection — Classifying the emotion on the face as happy, angry, sad, neutral, surprise, disgust or fear

* Facial detection - is the first part of our pipeline. We have used the python library [Face Recognition](https://github.com/ageitgey/face_recognition) that we found easy to install and very accurate in detecting faces.
* Facial Recognition - verifies if two faces are same. The use of facial recognition is huge in security, bio-metrics, entertainment, personal safety, etc. The same python library [face\_recognition](https://github.com/ageitgey/face_recognition) used for face detection can also be used for face recognition.
* Emotion detection -Humans are used to taking in non verbal cues from facial emotions. Now computers are also getting better to reading emotions.

**Resource link:**

* <https://www.youtube.com/watch?v=URkKQBA2HJg>
* <https://www.youtube.com/watch?v=syOgjbjSpGk>