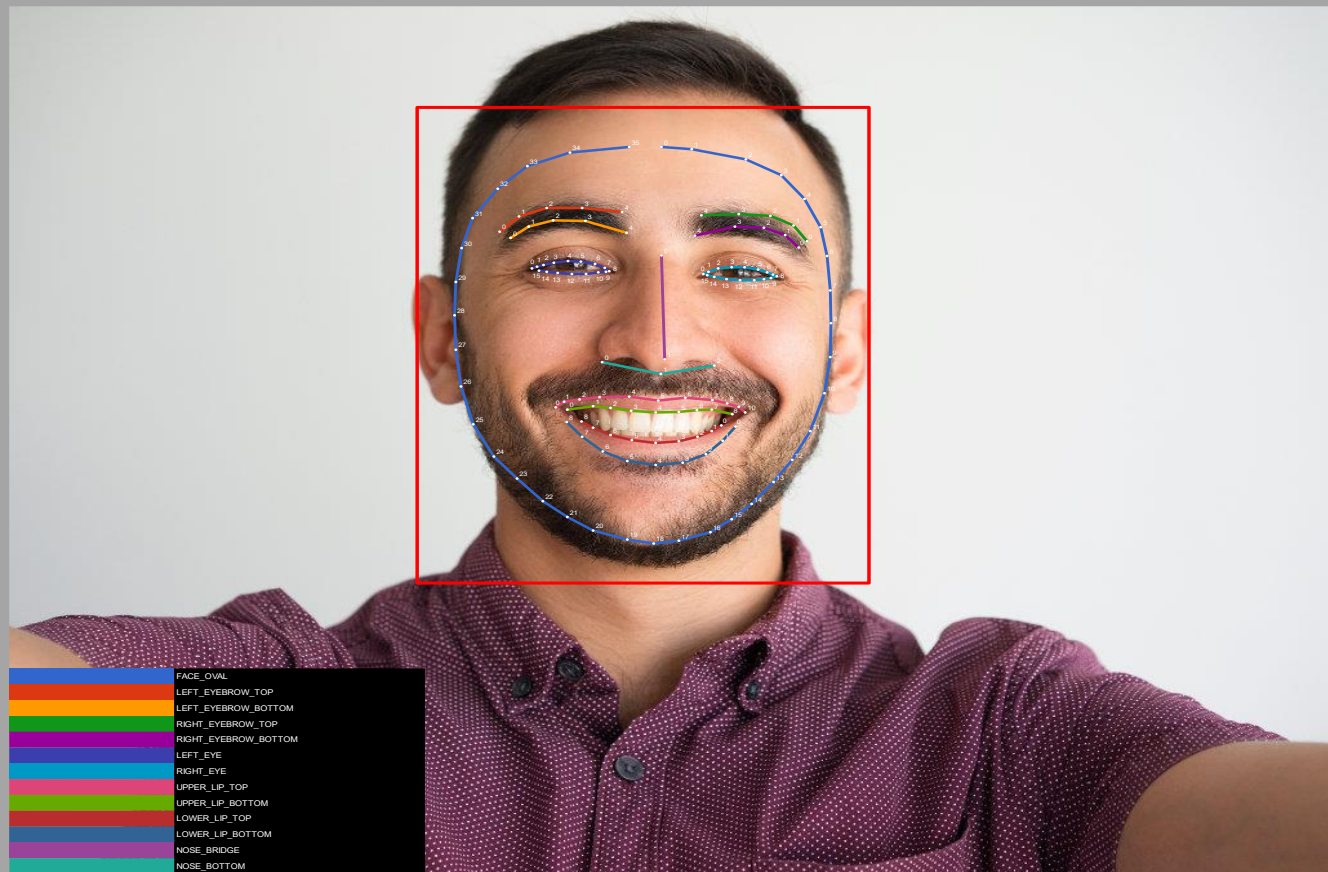


Abstract

- Facial expression has made significant progress in recent years with many commercial systems are available for real-world applications.
- It gains strong interest to implement a facial expression system on a portable device such as tablet and smart phone device using the camera already integrated in the devices.
- It is very common to see face recognition phone unlocking app in new smart phones which are proven to be hassle free way to unlock a phone.



- The feature extraction stage involves pre-processing stages such as acquiring a sequence of images (15 frames/second) using a video camera and detecting the facial region of the image and standardizing the properties for lighting the image , this application BRIEF feature extraction is being used.

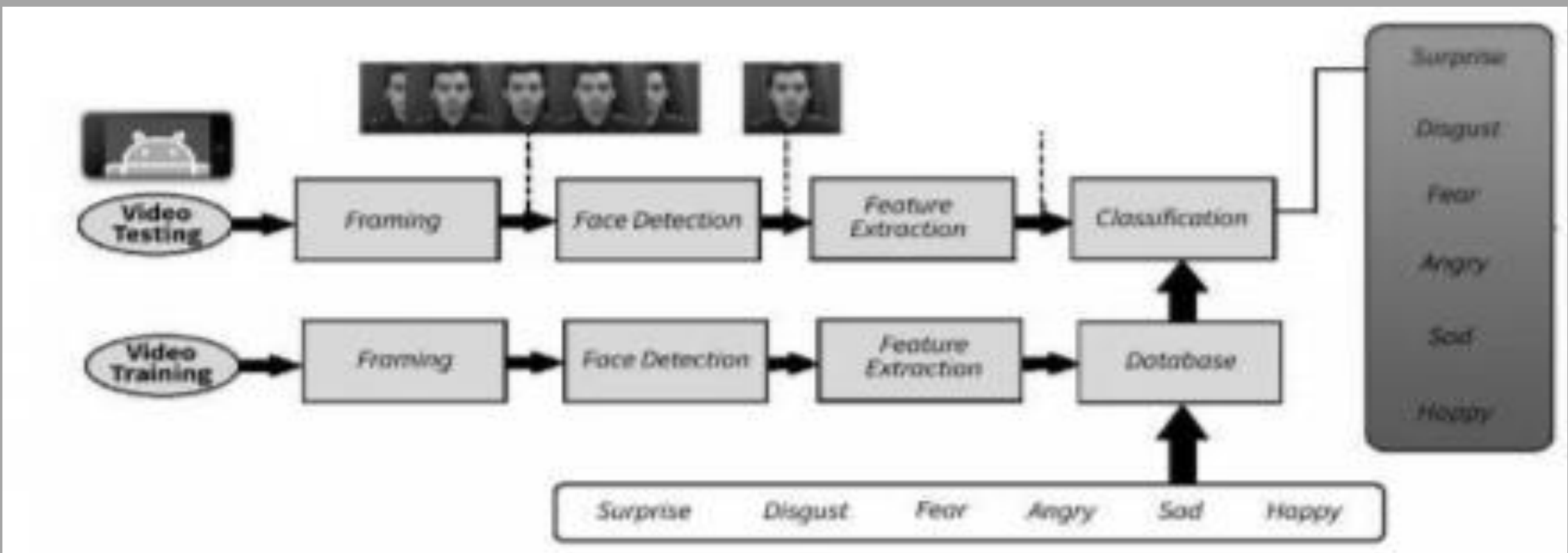


Fig 1

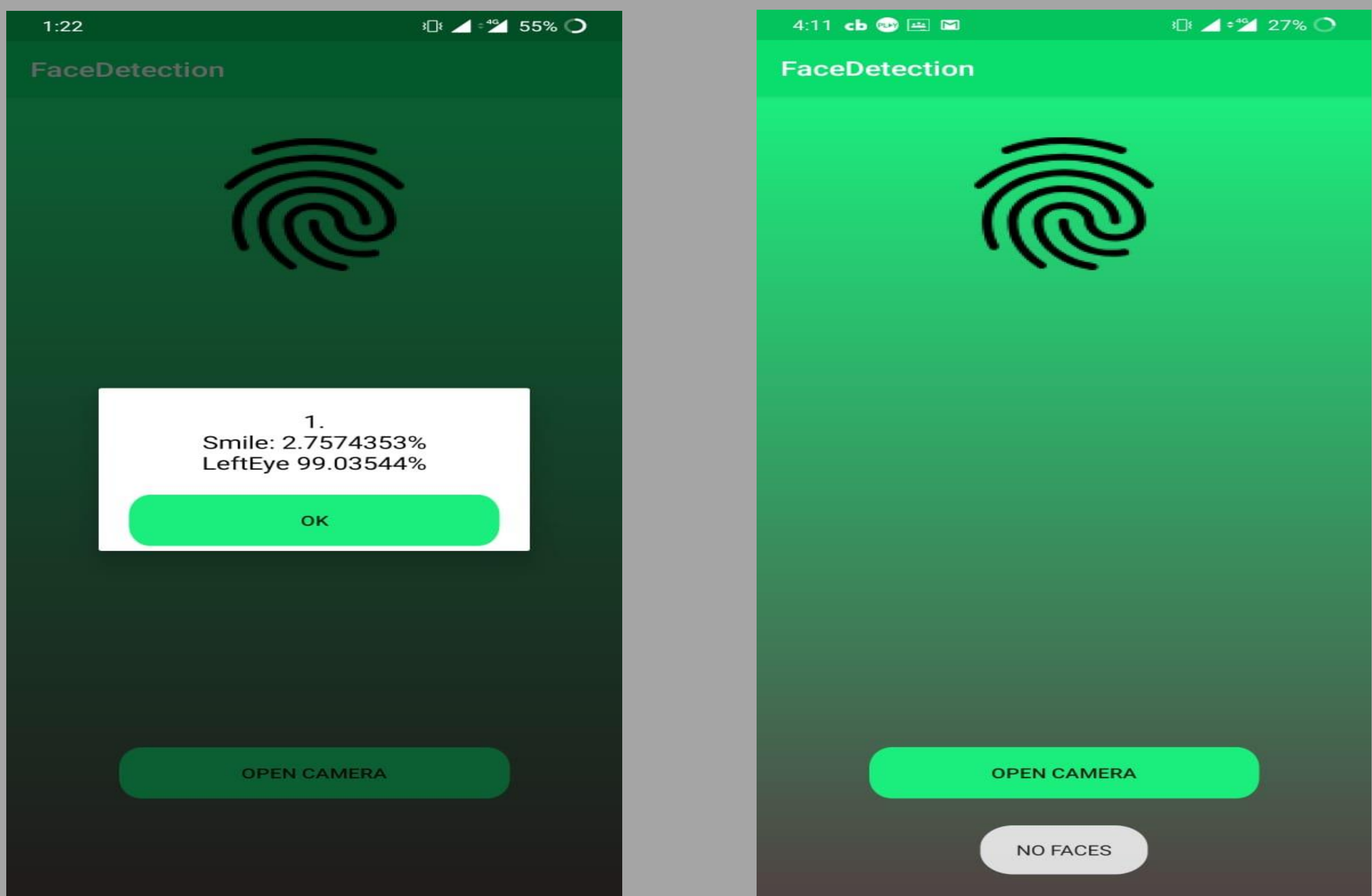
Introduction

- Face recognition technology has a wide range of applicability from auto unlock in smart phones and psychological usage in the past few years .
- It is a very good example on the success of computer vision on embedded devices. Facial expression recognition in such is a similar idea that will have numerous uses in the future.

Further enhancement

- The technology can be used to take the feedback on the teacher based on the expression of the students listening the class
- It can also be used to modified to text recognition by changing the ML hypothesis
- This method can be used to track faces across the video frames

Outcome



Tools Used

Software used:

- Android studio
- Machine learning Classifier
- Java

Methodology

- Figure 1 shows a block diagram of emotional face recognition on mobile phone.
- The three main stages in the system are: (i) feature extraction and (ii) feature classification.
- The feature classification process involves the K-nearest neighbor (KNN) algorithm; it is widely accepted as a powerful nonparametric pattern classification method in image processing.

References

- <https://firebase.google.com/docs/ml-kit?authuser=0>
- <https://firebase.google.com/docs/ml-kit/android/detect-faces?authuser=0>