

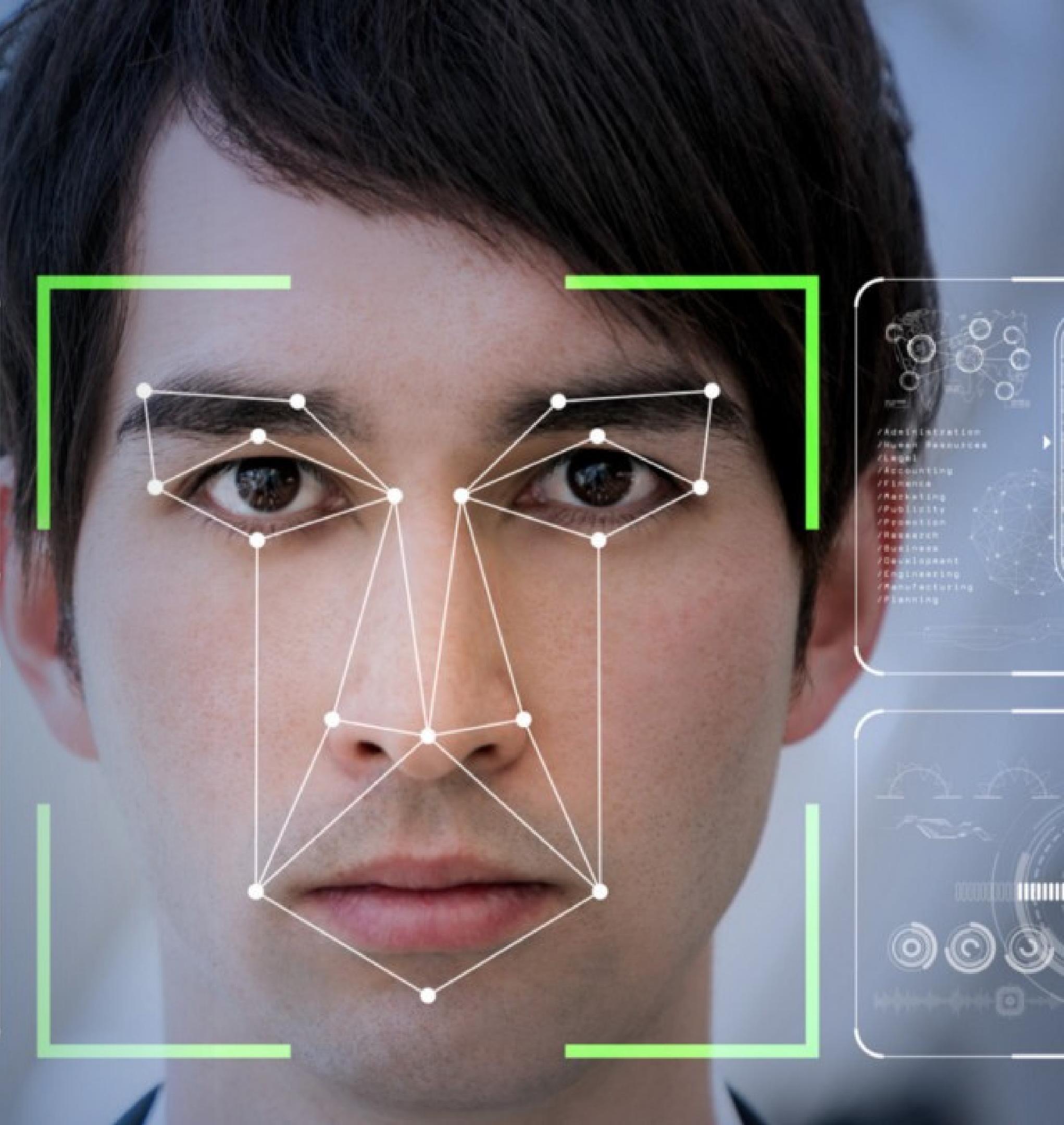
FACIAL EXPRESSION RECOGNITION

Presented By -

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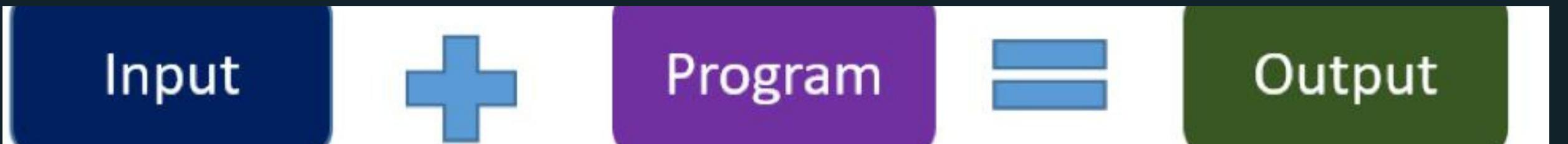
Under Guidance of -

Dr Shekhar R



Traditional programming vs ML programming

Traditional programming is a manual process—meaning a person (programmer) creates the program. But without anyone programming the logic, one has to manually formulate or code rules.



machine learning is an automated process. It can increase the value of your embedded analytics in many areas, including data prep, natural language interfaces, automatic outlier detection, recommendations, and causality and significance detection



What is this project about?



- Emotional facial expressions can inform researchers about an individual's emotional state. Recent technological advances open up new avenues to automatic Facial Expression Recognition (FER).
- Based on machine learning, such technology can tremendously increase the amount of processed data. FER is now easily accessible and has been validated for the classification of standardized prototypical facial expressions.
- However, applicability to more naturalistic facial expressions still remains uncertain.



Libraries Used:

open Cv

TensorFlow

Keras

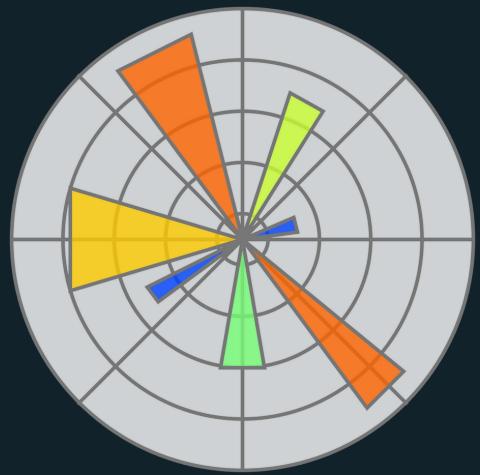
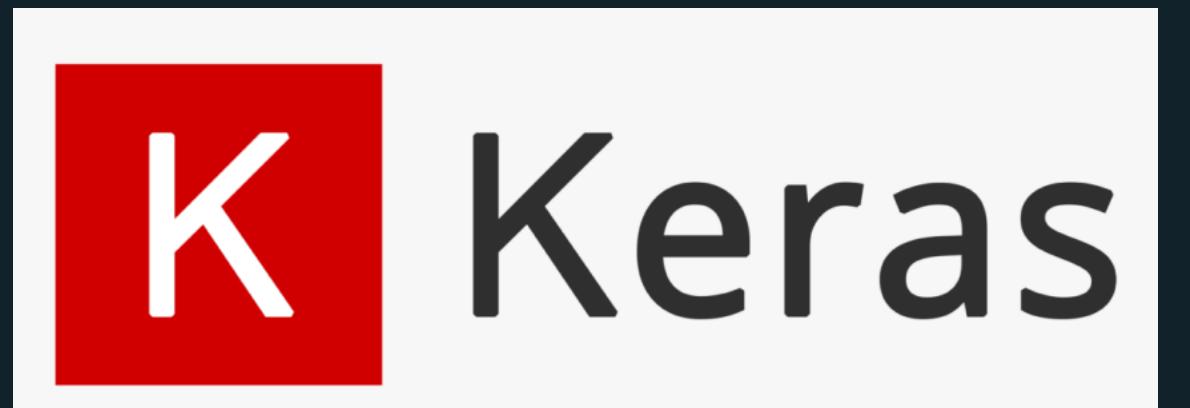
Skcit Learn

pandas

Numpy

Matplotlib

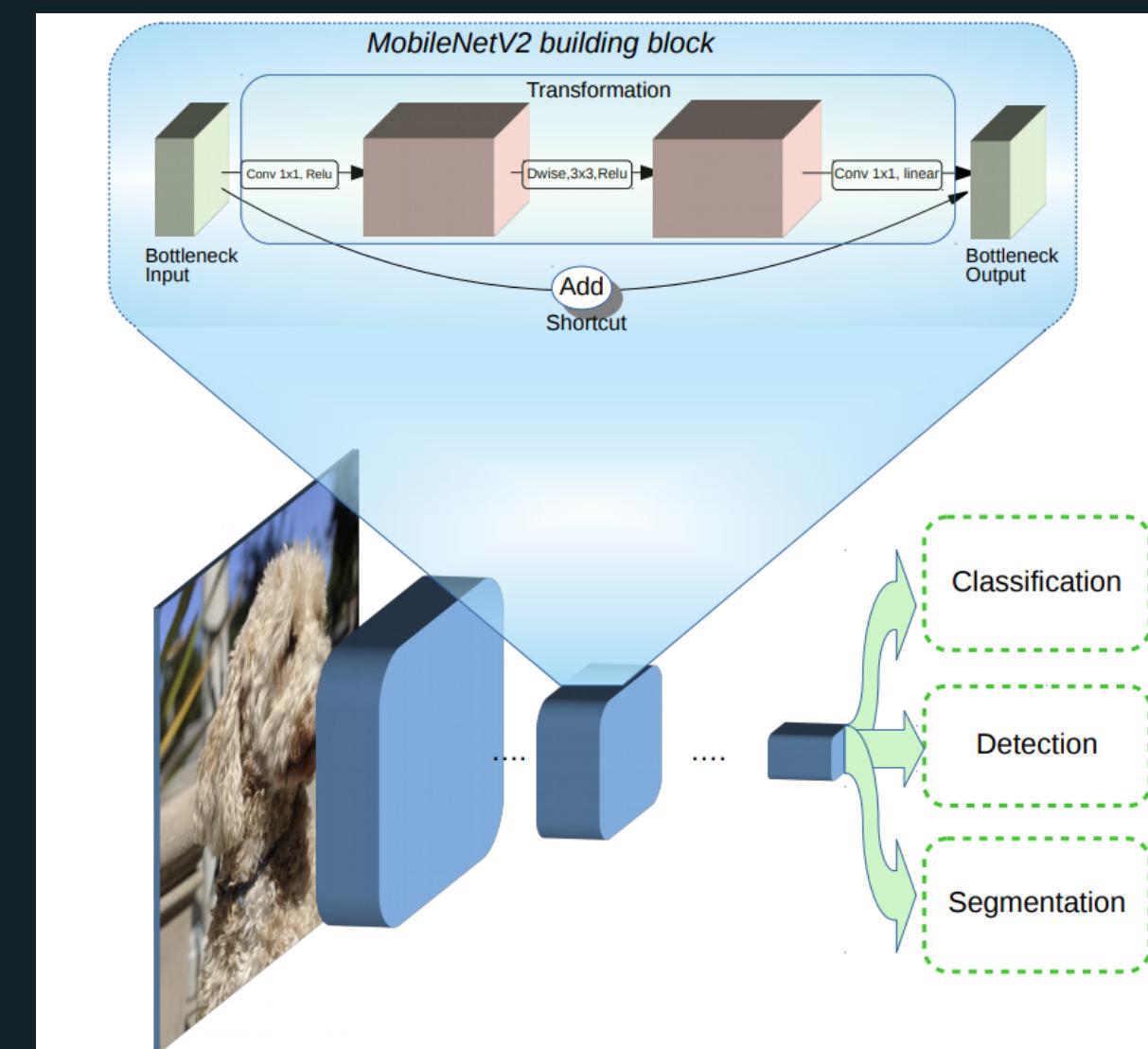
Seaborn



Model Used:

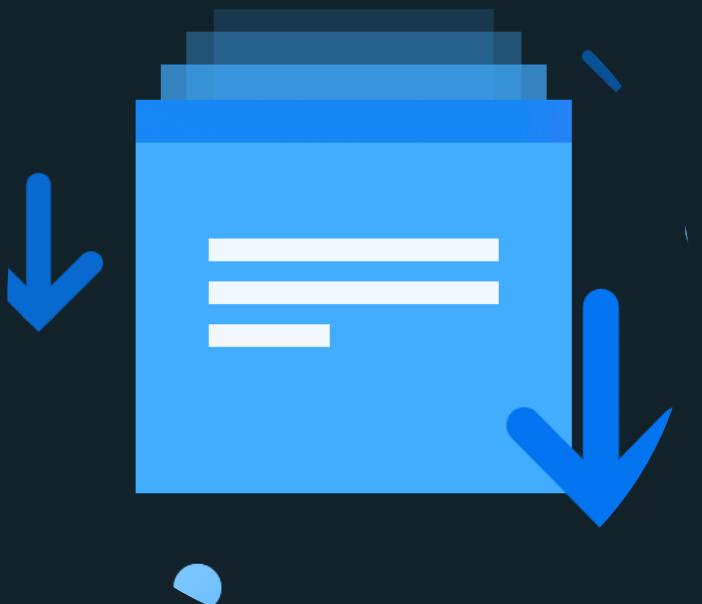
MobileNet-v2

- It is a convolutional neural network that is 53 layers deep. You can load a pretrained version of the network trained on more than a million images from the ImageNet database .
- The pretrained network can classify images into 1000 object categories, such as keyboard, mouse, pencil, and many animals.
- As a result, the network has learned rich feature representations for a wide range of images. The network has an image input size of 224-by-224.



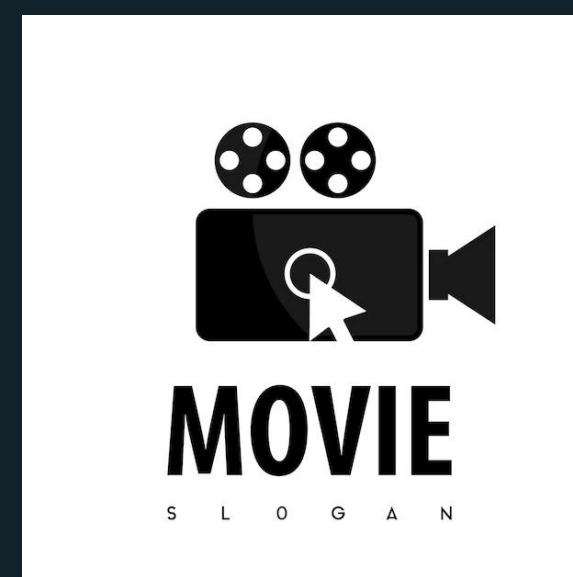
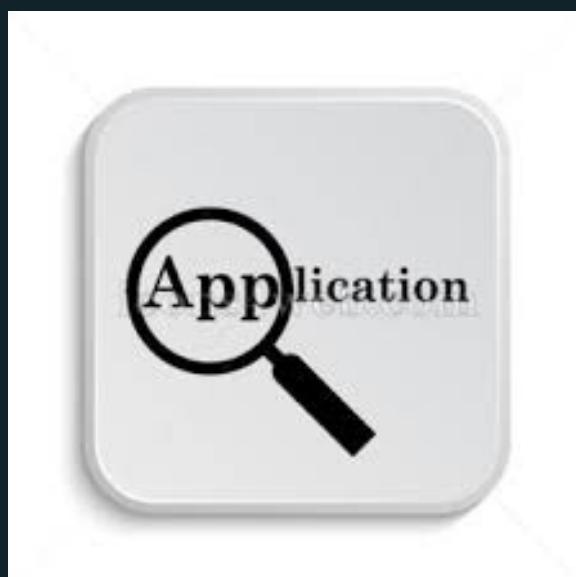
Dataset Used:

- The data consists of 48x48 pixel grayscale images of faces. The faces have been automatically registered so that the face is more or less centred and occupies about the same amount of space in each image.
- The task is to categorize each face based on the emotion shown in the facial expression into one of seven categories (0=Angry, 1=Disgust, 2=Fear, 3=Happy, 4=Sad, 5=Surprise, 6=Neutral). The training set consists of 28,709 examples and the public test set consists of 3,589 examples.



Applications:

- We can record true expressions when we are watching a web series or movies.
- We can differentiate between fake and original expressions.
- Autism Detection
- Based on your mood we can recommend music , books , quotes etc.
- During interrogation we can identify whether a person is telling a lie or not.



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IMPLEMENTATION**

