Facial Emotion Recognition System Using Deep learning

1. Project & It's Features:

Facial object recognition, such as the eyes and mouth, is usually one of the most important difficulties in facial image processing since it encompasses a wide range of fields, including emotion recognition and face identification. Face, according to Joseph C. Hager. The detection feature is utilized as an input to other image processing operations like face and emotion identification. Various scholars investigated various ways to face emotion detection. In certain situations, either strategy can be used effectively.

1. Features:

- This Facial emotion recognition system provides assistance for different computer vision tasks like Crime detection and marketing purposes.
- Implemented this system using Mediapipe module.
- First, we will collect our facial expressions for different emotions using OpenCV and convert them into NumPy files. These NumPy modules contain facial landmarks that are recognized using the media pipe package.

2. Tools Used:

- Numpy
- Cv2
- Mediapipe

3. Approach:

- The Approach we implemented can be explained simply by the following example If we bought a brand new mobile, it does not contain our facial recognization data to recognize.
- After unpacking the phone we will try to give our facial images to later recognize and unlock our phone fastly. That is the same approach we followed.
- Here in our approach, we don't feed our model with any predefined image classified data set instead we train our model with our facial images (without dataset).
- Modules used in our approach - Numpy, media pipe, cv2
- MediaPipe: Mediapipe is an open-source framework developed by Google. we can explain the working of the media pipe package using a simple example, Let's say we may take our hand, the hand has some landmark points.
- Media pipe is a library that can predict all the landmarks of my hand, and my face very easily at a very fast frame like 24 or 25 frames per second and we can take these landmarks, and can give them to the model. And the model can take these points and then predict the particular emotions associated.
- First, we will collect our facial expressions for different emotions using OpenCV and convert them into NumPy files. These NumPy modules contain facial landmarks that are recognized using the media pipe package. After collecting all NumPy files we will feed these to our model and our model gives an accuracy of around 90%. After that, we will collect the inference of our model by testing it.

5 Challenges Faced:

- We followed a different approach from previous approaches knowing that approach was a little difficult at first.

Question 5

I will choose Pavan and Harsha as my partners if I want to start a software company.
The reason I choose them as my partners is that Pavan has excellent communication skills and he also has excellent programming skills which will help in understanding things in a technical way and Harsha has excellent management skills which are a very important part of the company.
And to mix and use them as effective strategies one needs to have leadership skills and I have them.
So, I can say that we 3 can make up a good team.