VIDEO HIGHLIGHT EXTRACTOR

**OBJECTIVE**

To extract the identified scenarios – Goal moments, Happy moments and Loss moments – from the input video. The extracted video segments would be of 30 s to 1 min duration and would be capturing the emotions of the people in the video as well.

**GOAL MOMENTS EXTRACTION**

In this Project, the goal moment detection comprises of object detection, object tracking and action detection.Here the objects are boal and player.Also action is goal.To detect these features we use transfer learning method.

SoccerNet-V2 is the dataset used in this project.The Action Spotting dataset consists of 500 complete soccer games including:

* Full untrimmed broadcast videos in both low and high resolution.
* Pre-computed features such as ResNET-152.
* Annotations of actions among 17 classes (Labels-v2.json).

Action spotting consists in localizing when and which soccer action occurs, in this dataset among 17 classes. But for our project we have to track only the goal moments. we cloned the repository and also downloaded videos to do inference using CALF benchmark model.Then action spotting is done .In which,we select the goal moments with confidence value greater than 0.5 as goal . The output is saved as json file.Then the output json file is processed to get the timestamp and extract the video clip with that timestamp with a 30 second buffer before and after.

**HAPPY AND LOSS MOMENTS EXTRACTION**

Emotion detection is used to find happy and loss moments in this project.FER(Facial Expresssion Recognition) module is used to find emotion detection. FER by default detects faces using OpenCV’s  Haar Cascade Classifier. Alternatively, we can use a more advanced Multi-Cascade Convolutional Network in short `MTCNN`. It will use Peltarion API in the backend in place of the Keras model. By default, FER uses CNN, but if we want to use advanced MTCNN just pass `*mtcnn=True*` in FER parentheses just like `*detector = FER(mtcnn=True)*`. For further use we will use the MTCNN model for more accurate results.Then we use timedelta to find timestamp from frame number.Then ffmpeg-python module is used to extract videoclips having the mentioned timestamp with a 30 second buffer before and after.