CS 671 - DEEP LEARNING AND ITS APPLICATIONS
HACKATHON
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DEEP THINKERS

Topic: Cricket video annotation of batsman and bowler

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Problem Statement: Given a cricket ball delivery video of variable length, identify and annotate the batsman and bowler's name.

Dataset:

1. Whole cricket video length downloaded from Hotstar in 720p quality.
2. The whole video divided into each ball video and then each ball video split into frames.
3. Having the cropped images of each batsman and bowler.

Tentative Procedure:

1. Separate the whole cricket video into videos of each ball.
2. Generate frames for each ball video, created in the Step 1, into each ball folder.
3. Run a pre trained SSD with a fine tuning to give bounding boxes only for the batsman and the bowler.
4. Crop the two and store them into separate folders (Batsman/Player_ID and Bowler/Player_ID).
5. These cropped images will be used for training the Siamese network for naming the batsman and bowler.
6. Given a ball video length, scene segmentation/ binary classifier will be used for separating the starting scene frames (class 0) from all other scene frames (class 1).
7. These starting scene frames (class 0) will be used for the annotation (using SSD and Siamese network) when the ball video length is feeded (tested) and the class 1 scene frames are left as it is.

Final Deliverable:

Given a ball delivery video as an input, the black box (containing the scene segmentation/ binary scene classifier, SSD network and Siamese network) should be able to identify the scene before actually bowling the ball to the batsman, identify where the batsman and the bowler is by making the bounding boxes around them and finally naming the batsman and the bowler. So basically given an input ball delivery video, the output is the sequence of frames (videos at slightly lower fps) where the batsman and the bowler are annotated.