Journal Report 1
9/2/19-9/9/19
Praneeth Reddygari
Computer Systems Research Lab
Period 5, White

Daily Log

Wednesday September 4

Downloaded OpenCV and Darknet(which contains YOLOv3) on my computer for Python. Looked into ways I can identify the scoreboard at the bottom of the screen.

Friday September 6

Looked through more algorithms to identify the scoreboard.
Determined to use Contour Approximation to find the scoreboard.
Started to implement the Ramer-Douglas-Peuker algorithm, or split-and-merge algorithm. I identified the correct threshold value for the video through hyperparameter tuning. I also applied a Gaussian Blur on the video.

Timeline

Date	Goal	Met
Sept 9	Download all needed software and get test video	Yes. Downloaded OpenCV and Darknet. Started on finding scoreboard
Sept 16	Identify the scoreboard to find when live play is in session	
Sept 23	Apply YOLOv3's pre-trained sports-ball neural network on my video	

Reflection

It took quite some time to figure out how to download OpenCV and Darknet, but I finally finished it. For detecting the scoreboard, I am using Contour Approximation so that I can easily identify a rectangle in each frame. If applying a binary threshold on every frame of the video still leaves more than one rectangle identifiable, I will add some limitations to the algorithm so that it does not identify other rectangles in the image. Because the scoreboard is always at the bottom of the screen, I can put a height limit. The algorithm will only find rectangles under that pixel height value.