Journal Report 10
10/18/19-11/25/19
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Daily Log

Monday November 18

I downloaded a range-detector script and did some editing to make it work. Then, I adjusted sliders for the min and max HSV values to see which set of values would best illuminate the ball while blacken out the other parts of the video. I found a good set of values and put them in my actual code.

Wednesday November 20

With the min and max HSV values, I examined the masked video and if it could find the ball. This method showed good progress. It was able to detect the ball very clearly when a player was dribbling it on the court and sometimes when it was in the air. It would go away when a player was in front of the ball.

Friday November 22

Because in some frames the ball was not being found, I decided to merge a tracking algorithm with this color gradient algorithm. The main concept is that when the color gradient algorithm finds the basketball, a tracker will be created and will track the basketball until it can be found again by the color gradient. This process will repeat until the scoreboard goes away, which means a highlight is playing.

Timeline

Date	Goal	Met
Nov 4	Track the ball and calculate the trajectory of the ball	Debugging another method to track basketball. Video may be too blurry
Nov 11	Track the basketball	Found a possible other way to track the basketball. I am almost done implementing it
Nov 18	Brainstorm and try ideas out to determine how much a shot is worth	Made significant strides in tracking the basketball. I need to implement the tracking algorithm with my color gradient.
Nov 25	Implement tracking algorithm with the color gradient to successfully track the basketball	
Dec 2	Track where a shot starts from to categorize it as a 3-pointer or 2-pointer	

Reflection

This week I made huge strides with this new algorithm. I can actually see the outline of the ball in the mask in most frames, so the algorithm will be able to pick it up. I just need to combine this with the tracking algorithm to finish tracking the ball. After tracking the ball, I will probably apply a canny edge detection filter first to see whether that would detect the 3-point line, because it is usually distinct from the court. I am almost done with tracking the ball, which is integral to my winter goal.

*Winter Goal: Be able to calculate the score of a basketball game on a downloaded video without using the scoreboard.