Find the Lag

Ruchir Chheda and Aditya Harakare
Team ID - HA 226126

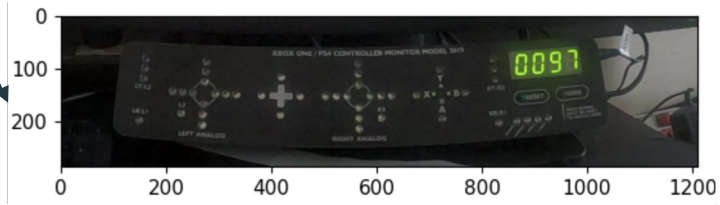
Yolo V5

The Yolo here solves a very simple problem here which is to find the exact positions of screen and hardware device, considering some error margin. This is actually an overkill, as the actual setup remains the same, but even if it were to change. This will not have any issue.

Yolo V5


0
200
400
600
800
1000
0
250
500
750
1000
1250
1500
1750

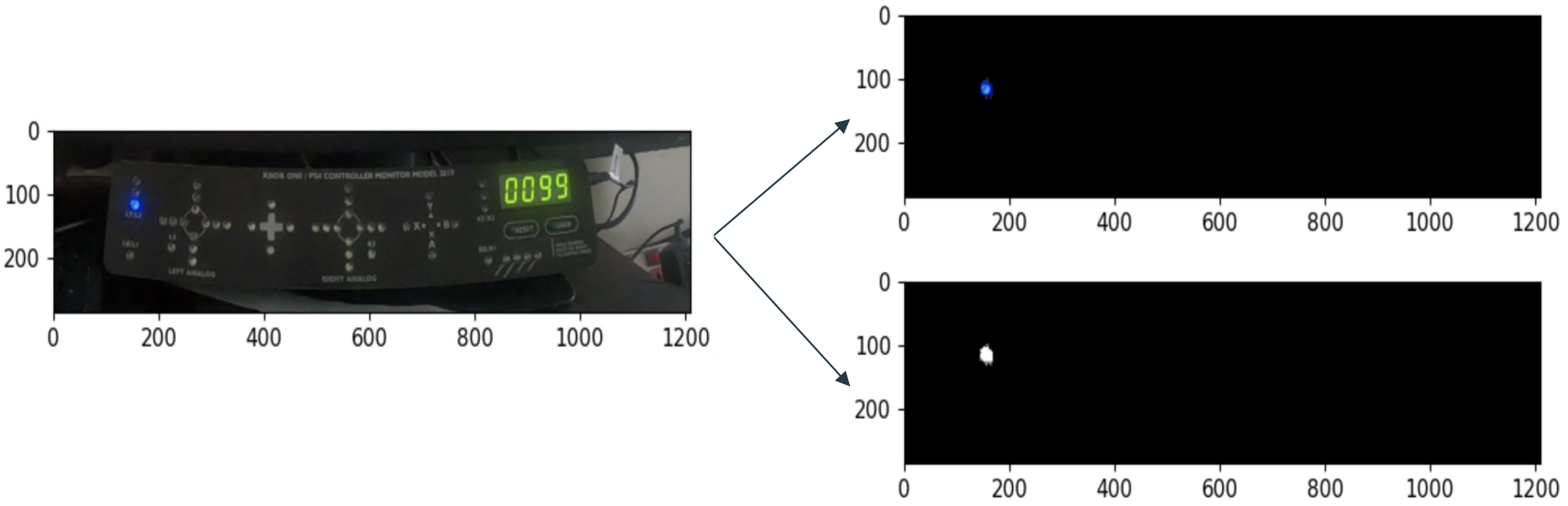

0
100
200
300
400
500
600
700
0
200
400
600
800
1000
1200
1400


0
100
200
0
200
400
600
800
1000
1200

Hardware Device

We have used a simple blue detection filter, after thresholding and adding double counting safety checks get all the trigger locations.

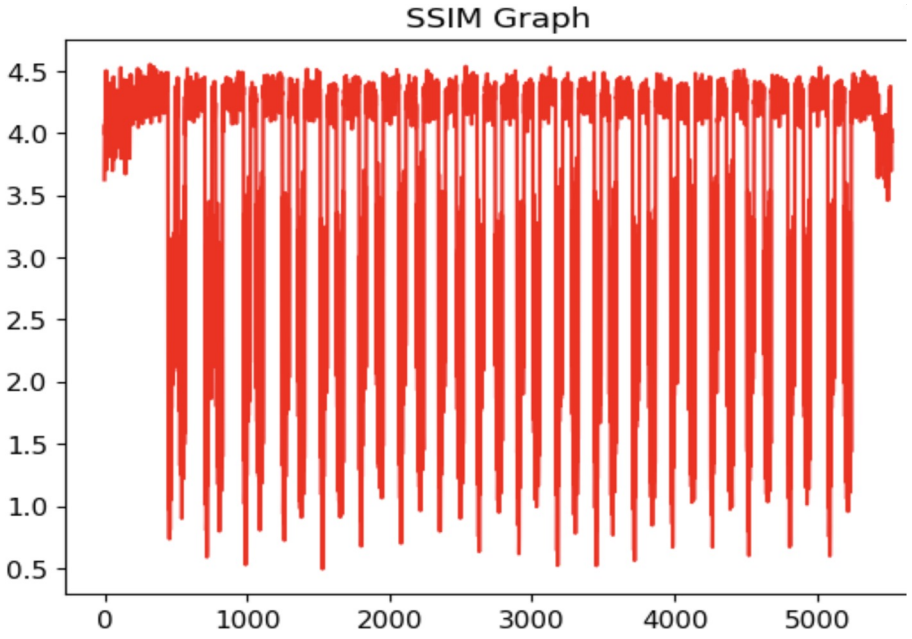
Hardware Device



Screen

We are using an image comparison metric between frames at different instances to create disparities in the images and maximise, we have used methods to make the method more robust. From this we get all the action locations

Screen



Final Calculations

```
1  frame_diff = []
2  for i in range(len(action_loc)):
3      frame_diff.append(action_loc[i] - trigger_loc[i])
4  print(frame_diff)
```

[13] ✓ 0.1s Python

```
[24, 23, 20, 23, 22, 24, 23, 21, 21, 21, 24, 22, 23, 22, 21, 21, 24, 24]
```

```
1  time_diff = []
2  for i in range(len(frame_diff)):
3      time_diff.append(frame_diff[i] / frame_rate * 1000)
4  print(time_diff)
```

[14] ✓ 0.1s Python

```
[100.10000000000001, 95.92916666666666, 83.41666666666667, 95.92916666666666, 91.75833333333333, 100.10000000000001,
95.92916666666666, 87.5875, 87.5875, 87.5875, 100.10000000000001, 91.75833333333333, 95.92916666666666, 91.75833333333333,
87.5875, 87.5875, 100.10000000000001, 100.10000000000001]
```