

Explanation of Project Modules

Camera Calibration



Combine



Camera Calibration

- SIFT Feature



Camera Calibration

- `getPerspectiveTransform()` from `opencv3.4`

```
[[ 6.04176864e-01 -5.95934596e-01 1.58909192e+02]
 [-3.02047643e-02 1.37485661e-01 1.88985244e+02]
 [-1.53784244e-05 -1.19517968e-03 1.00000000e+00]]
```

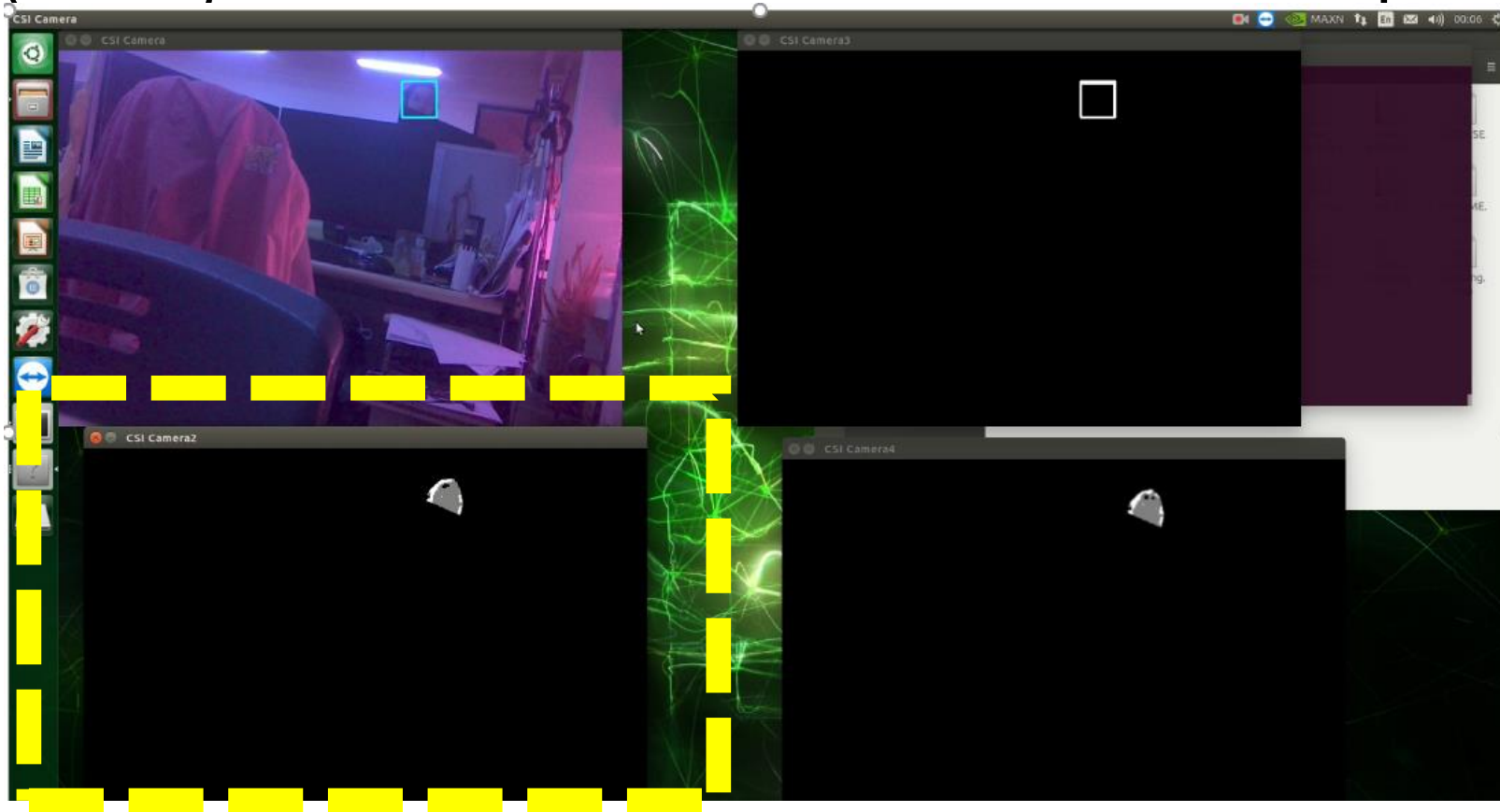

Camera Calibration

- `warpPerspective()` from `opencv3.4`



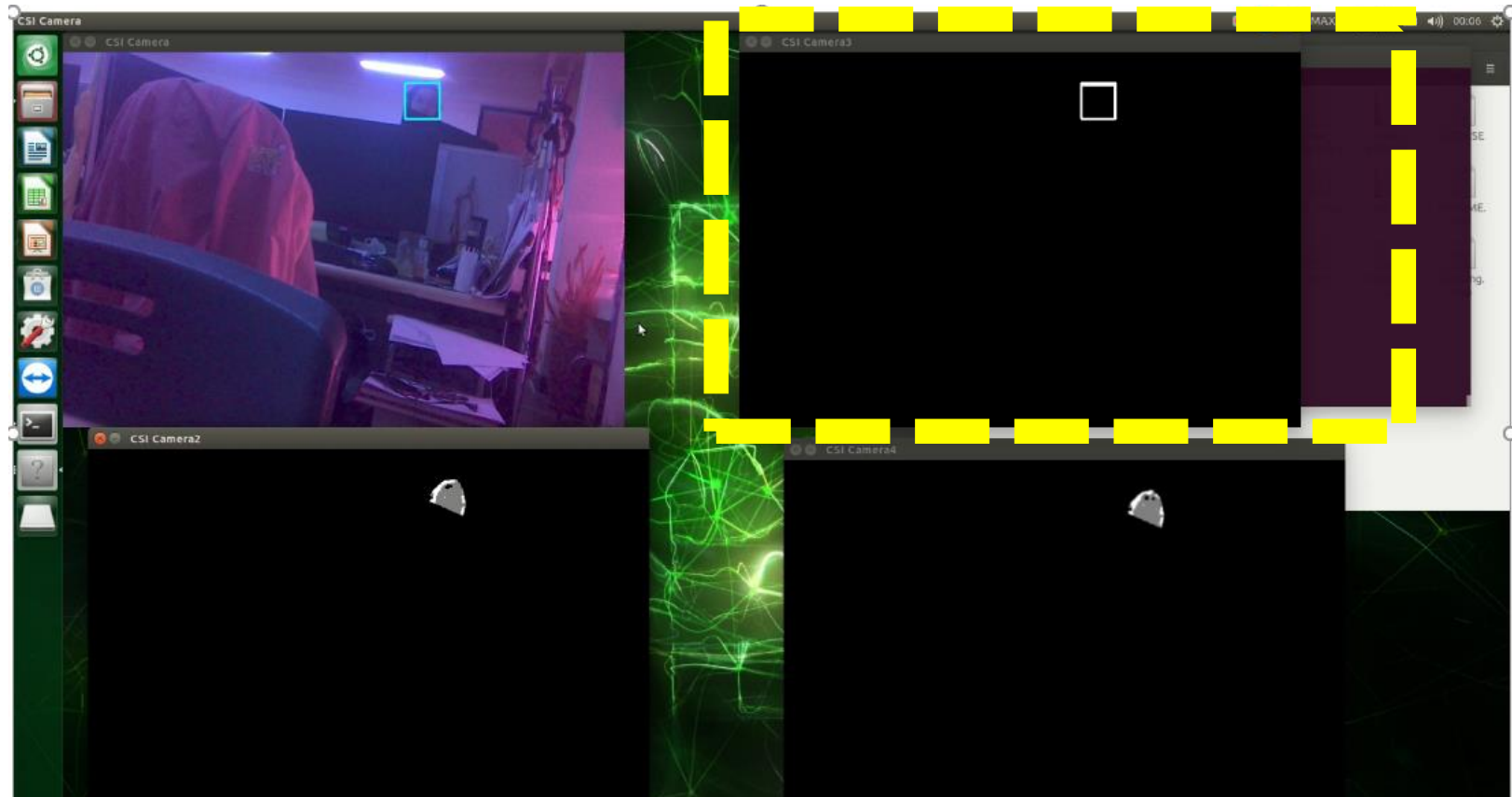
Object Detection

- Using Background Subtraction (BackgroundSubtractorMOG2 Class from opencv3.4)

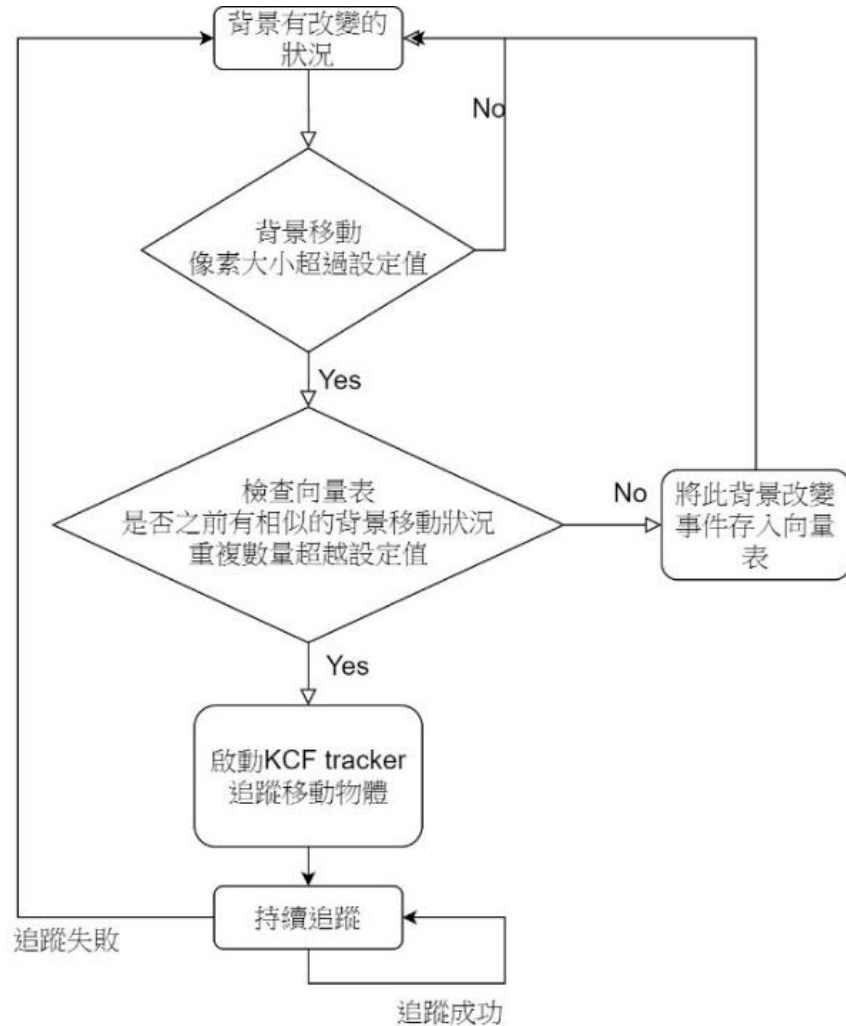


Object Detection

- `approxPolyDP()` from `opencv3.4`

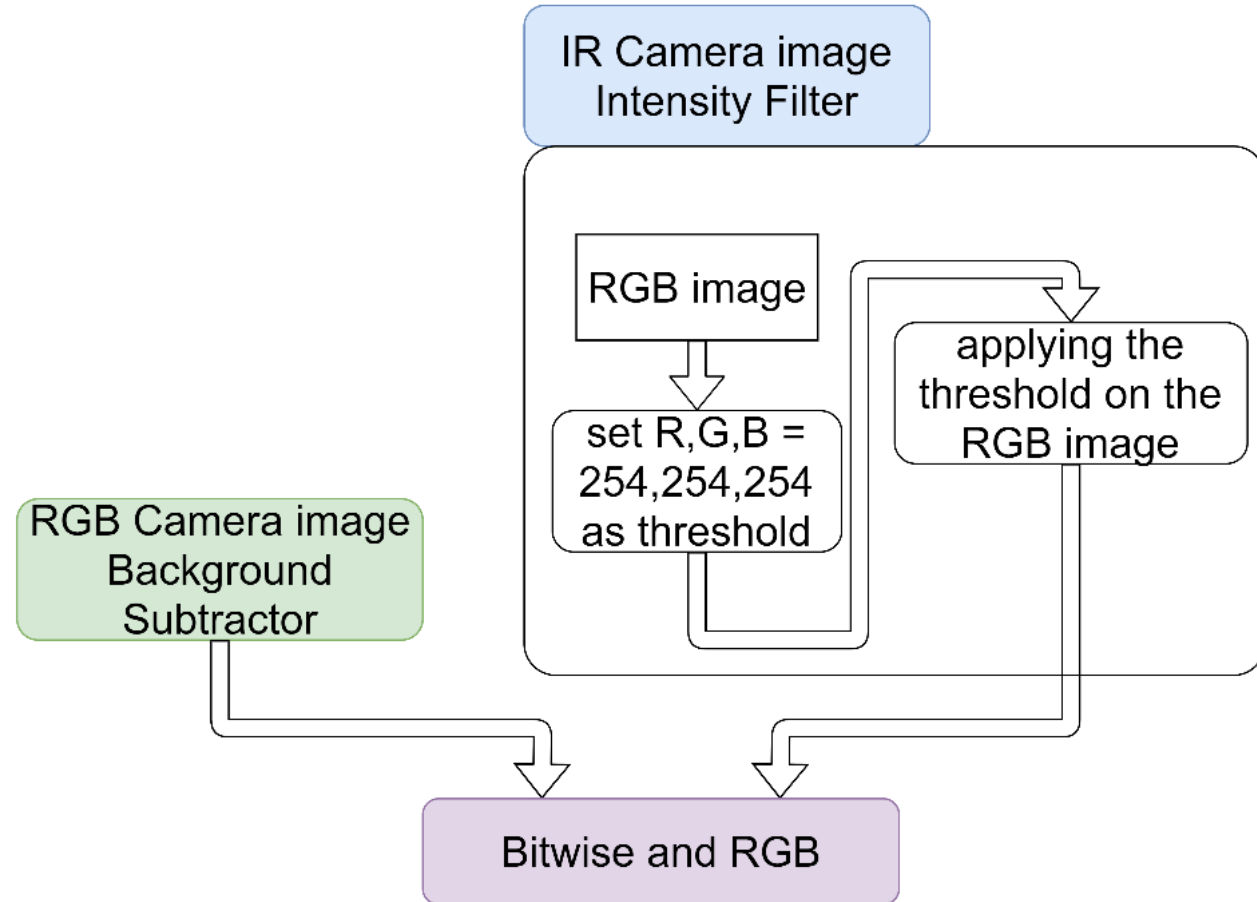
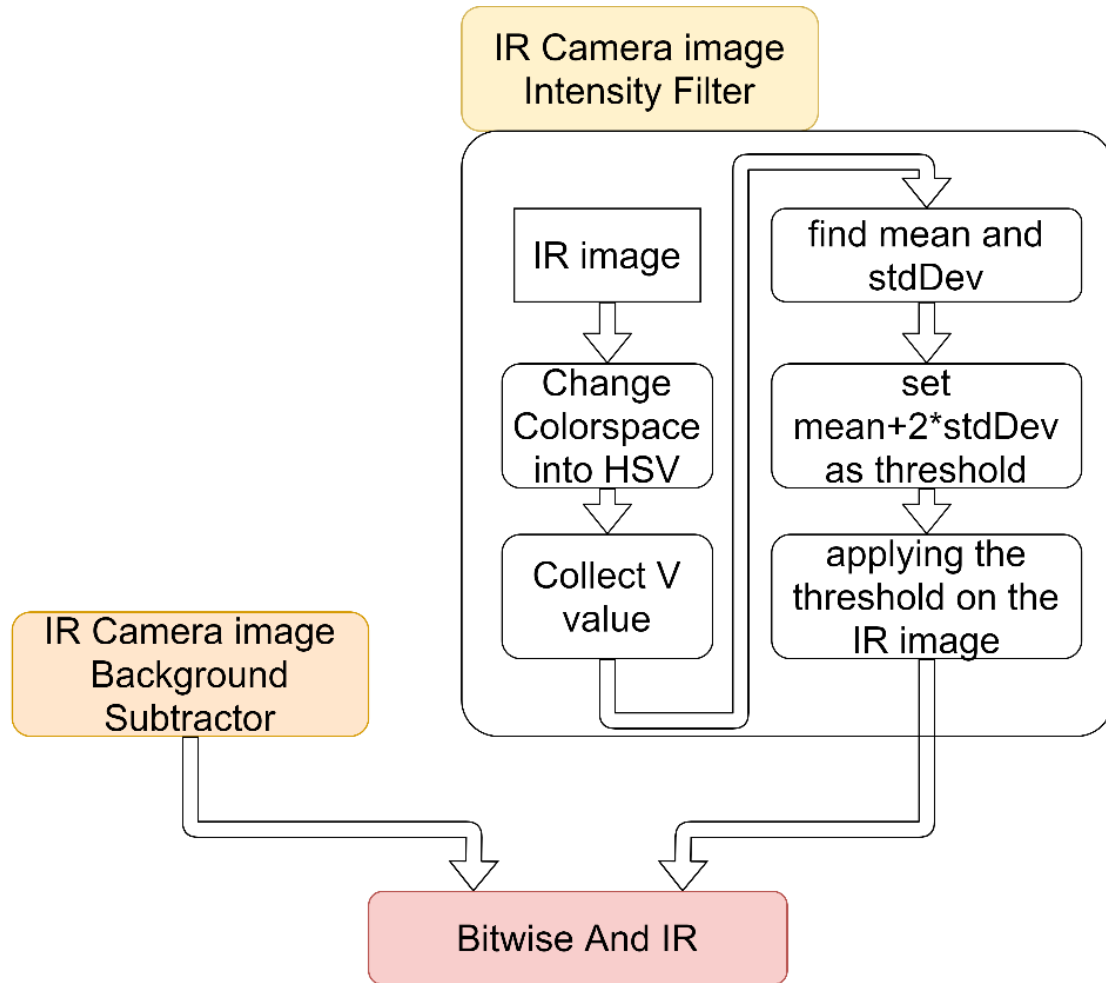


Object Tracking

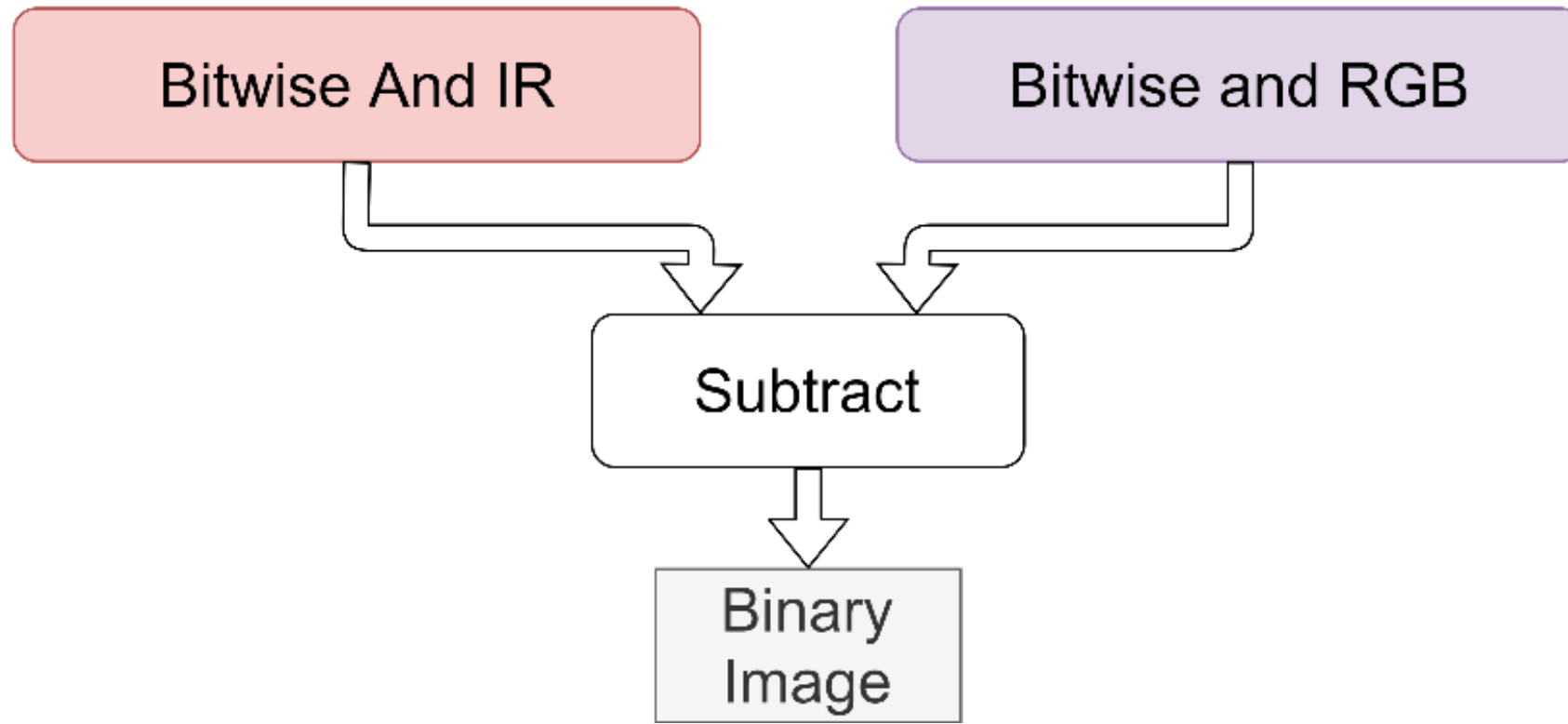


- KCF tracker: "High-Speed Tracking with Kernelized Correlation Filters"
- I use Opencv library of TrackerKCF class from opencv3.4

Laser Positioning



Laser Positioning



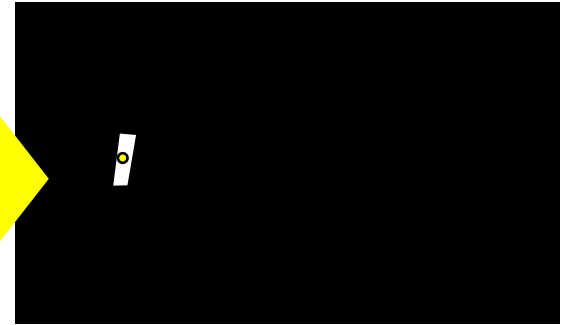
Laser Positioning



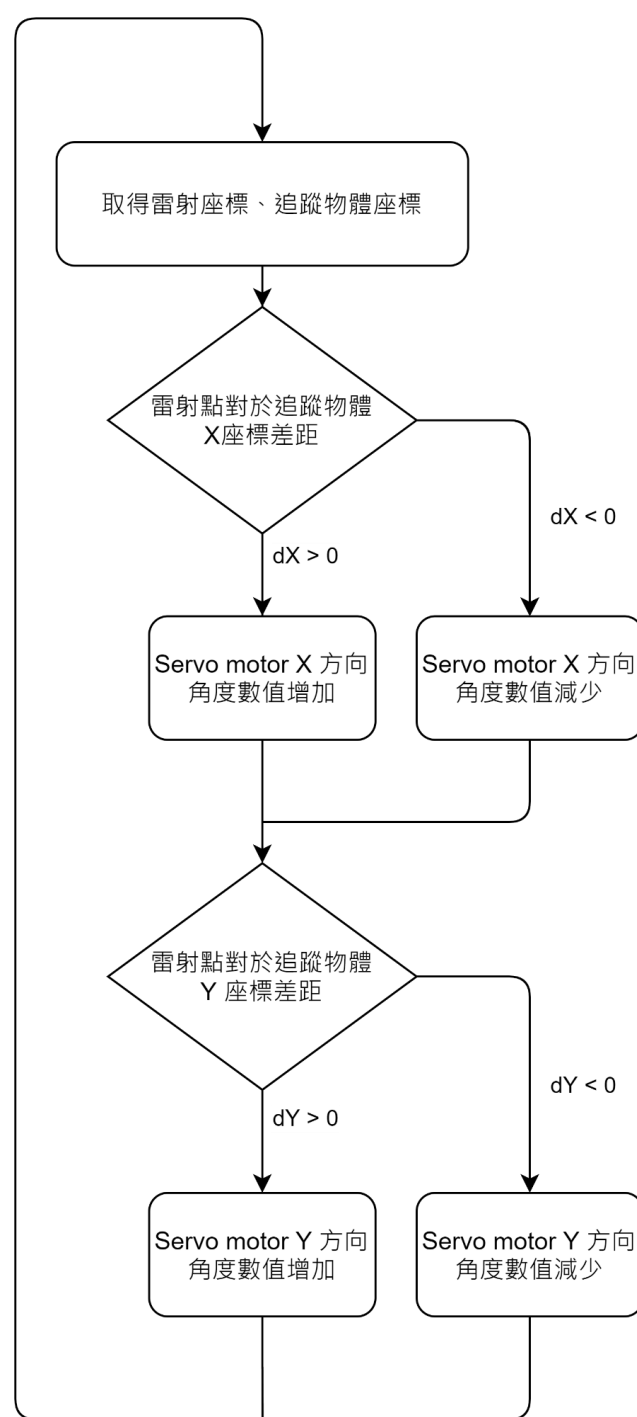
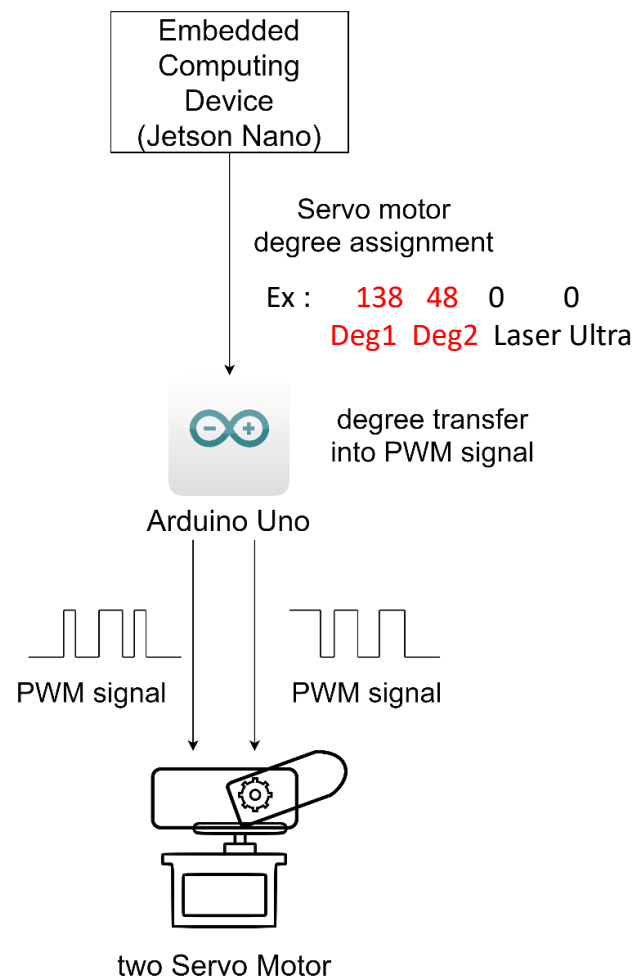
Filter from
Previous Slide



Find
moment



Motor Control



Drive animal away method

