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| S.No | Date | Work Done Today | Next Day Plan | Important things to Remember |
| 1 | 8/5/2017 | \*Read image and convert it into grey image  \*Plot binary histogram for grey scale image | Video Analysis  Capturing video from web camera . | \*Code and object to be read should be in same file .  \*Binary histogram should be plotted in grey scale to run the code faster |
| 2 | 9/5/2017 | Capture frames from a video and make binary histogram. | Creating haarcascade for face detection , eyes and mouth | \*no. of frames to be captures per second should be mentioned in the code . |
| 3 | 10/5/2017 | Creating haarcascade for face detection , eyes and mouth | Understand coding regulation write better code through pep 8 approval | \*different object should be detected in different color to avoid overlapping |
| 4 | 11/5/2017 | .Understanding Coding regulations  .How to make the code readable and why its important?  .Sublime text installation and commenting on code  .Git installation and integration to beta version Github working  . Pushing the previous work to Github | Allocation of individual task | \*spacing between 2 code should be according to pep 8 regulation .  \*Avoid many command in one line |
| 5 | 12/5/2017 | **Weapon detection**  .Search for images from different sources like image.org etc.  .Extract the images and store it into negative images resize and convert it into grey scale  .Extract the images and store it into positive images and segregate into knife ,hand gun and rifle . | Removing the cracked file | \*if desirable image is not found , superimpose one positive images on negative to create more positive images |
| 6 | 13/5/2017 | **Weapon detection**  Downloading more images  And removing cracked file | Creating more positive images | Avoid images with white background for better efficiency |
| Sunday | 14/5/2017 |  |  |  |
| 7 | 15/5/2017 | **Weapon detection**  Image cleaning | \*Superimposing positive images on negative. | Avoid repetitions of same image. |
| 8 | 16/5/17 | Installing putty and its different packages , updating and upgrading to get Open CV library to access the cloud | Install Winscp and start data training | Care should be taken while accessing putty username and password. |
| 9 | 17/5/17 | **Weapon detection**  Winsap installation and and using it to superimpose images to create more positives images . uploading data positive and negative . | Pushing data to training set, and start training | All the necessary files should be uploaded in server prior to the training |
| 10 | 18/5/17 | **Weapon detection**  Integration of server to train the datasets  Creating a virtual ubuntu interface | Training the dataset and creating a harcascade, Pushing data to training set | Installation procedure should be followed stepwise |
| 11 | 19/5/17 | virtual ubuntu interface installation not successful  **Weapon detection**  \* training data set  Superimposing sample gun , knife and rifle image and creating positives images .  And creating harcascade and generating XML files .  Evaluation  since positives images are created by superimposing in is not detecting weapons properly on evaluation video. | Creating 20X20 size positive images of weapons  And training data | Harcascade should be created for more types ,shape and design in for large number of images for better accuracy |
| 12 | 20/5/17 | **Weapon detection**  Creating data sets with different shape and design of positive images for better result | Start training data | Cropping or removing the background image . |
| Sunday | 21/5/17 |  |  |  |
| 13 | 22/5/17 | **Weapon detection**  Created my own harcascade for rifle with 584 positive and 1168 negative images and trained it with 10 stages .  Tested with video file .  **Result –** Not accurate **,**detecting it all over the screen | Read YOLO(You only look once ) real time object detection . | Datasets were trained over relatively smaller number of file , hence result is not accurate , apply another layer to subtract background. |
| 14 | 23/5/17 | **Weapon detection**  **Created gun cascade file from training set .**  Applied hand cascade before detecting weapons .  Better than previous results | Try to get better result with better input. |  |
| 15 | 24/5/17 | **Weapon detection**  Created my own knife haar cascade from positives and negative data set training | Testing my haar cascade over different input videos | Skip the frames if you want to go to desired frame |
| 16 | 25/5/17 | **Weapon detection**  Testing my haar cascade over different input videos but did not get good results.  Testing the cascade with image input | Working on cascade files to get better results |  |
| 17 | 26/5/17 | **Weapon detection**  Installing environment for HOG Feature selection .  Haar cascade testing with images | Understand the occupied position detection code by intensity variation due to movement and apply it with hand movement for weapon detection |  |
| 18 | 27/5/17 | **Weapon detection**  Applying upper body cascade before detecting gun for better results . | Evaluation by Testing it with different video inputs . |  |
|  | 28/5/17 | SUNDAY |  |  |
| 19 | 29/5/17 | **Weapon detection**  Creating hand cascade to reduce the improve the result of weapon detection | Testing it with various image and video inputs |  |
| 20 | 30/5/17 | **Weapon detection**  Testing it with various image and video inputs, better results have been obtained by specifying the region around the hand | Creating cascade with man holding some objects |  |
| 21 | 31/5/17 | **Weapon detection**  Installing opencv in python for Creating cascade in linux server | Working on cascade |  |
| 22 | 1/6/17 | **Weapon detection**  Working on cascade making , not able to train the cascade due to virtual environment ran of memory | Training the datasets |  |
| 23 | 2/6/17 | **Weapon detection**  Background subtraction of non moving object by using Mixture of Gaussian (MOG) | Apply threshold for improve |  |
| 24 | 3/6/17 | **Weapon detection**  Applied threshold after background removal by using MOG . Dilation and erosion has also been applied before threshold .  Noise has been reduced | Convert the white portion (moving objects ) of binary image into grayscale and apply cascade over it . Background removal will reduce the false positive images |  |
|  | 4/6/17 | SUNDAY |  |  |
| 25 | 5/6/17 | **Weapon detection**  HOG descriptor for human detection over that gun cascade to detect weapon  Weapon has been searched over the bounding box only . |  |  |
| 26 | 6/6/17 | **Weapon detection**  Cascade over pedestrian HOG detector to restrict the region . Various input video has been used HOG is slow and cascade is giving false positive images inside the pedestrian bounding box | Because of poor performance of  Of cascade again need to work on creating cascade |  |
| 27 | 7/6/17 | **Weapon detection**  Taking only images of indoor as a background in 100x100 jpg format in gray scale ,total 6000 images were taken . | Collecting appropriate positive images of gun |  |
| 28 | 8/6/17 | **Weapon detection**  Collecting the images of a gun with hand in a background for better results and cropping the region of interest |  |  |
| 29 |  | **Weapon detection**  From 885 images 2000 positive images were made by superimposing them .  2000 positives and 4000 negatives images were takes  Cropping the positive images , creating text files and vector files for training cascade |  | Positive :Negative image should be 1:2 as good efficiency has been observed in previous work. |
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