

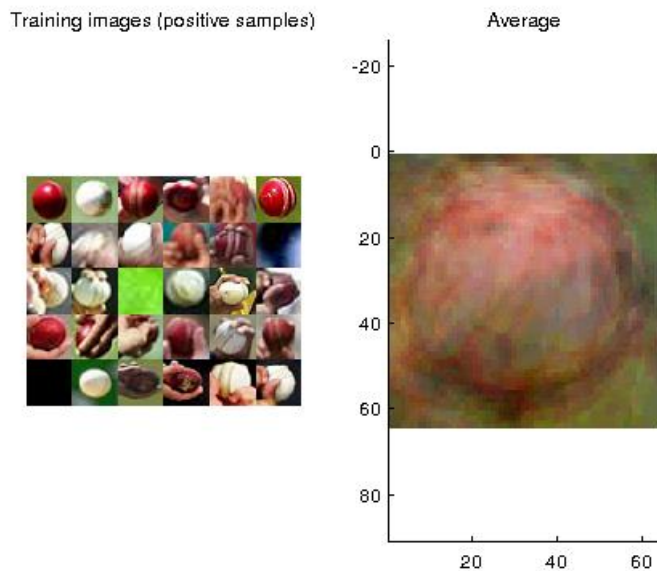
Object Detection Using HOG based Template Model

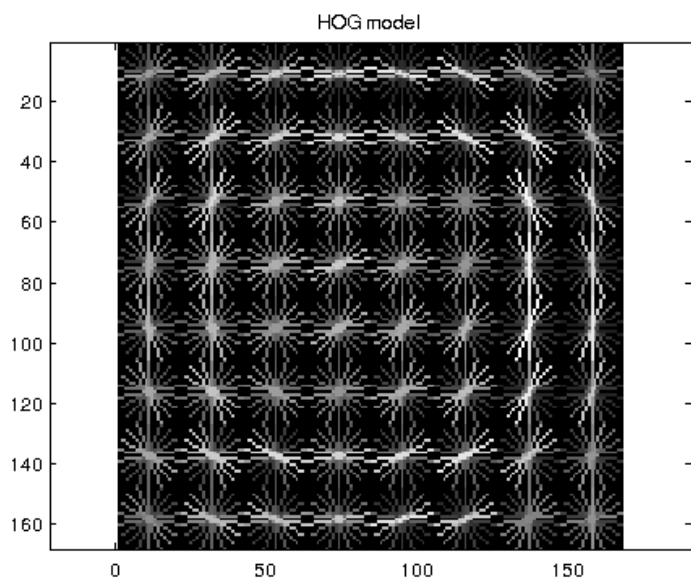
Aim : To detect all the possible instances of the given object in the image. Currently working
On cricket bat and cricket ball as objects.

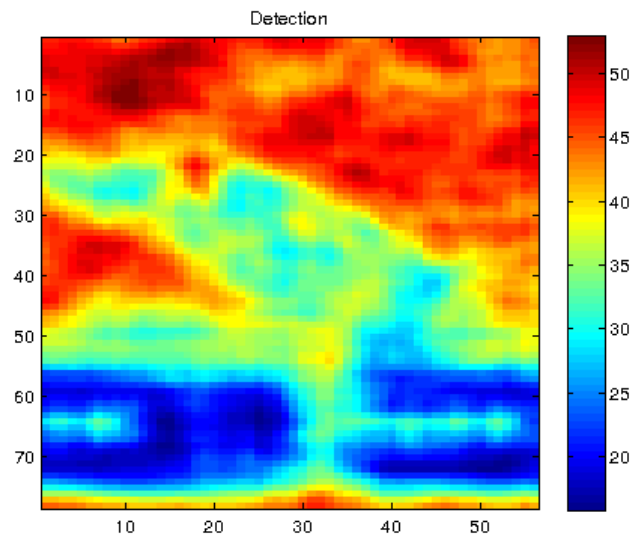
Procedure :

- Extract HOG features from the training images. [vl_hog]
- Learn a simple HOG template model.
- Apply the learned model to the test images. [vl_nnconv]
- Observe the score as heat map.
- The top scores can give us a clue about the position of object in the image.

Observations for Cricket Ball :





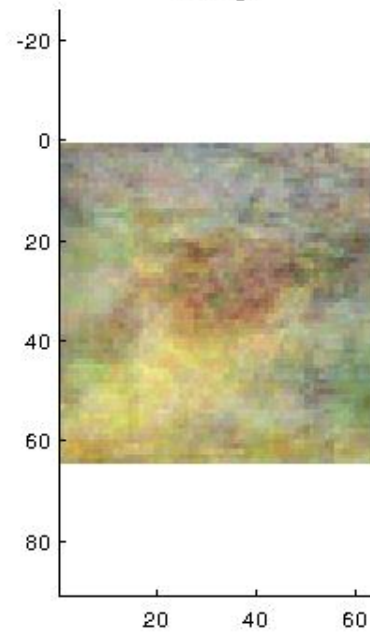


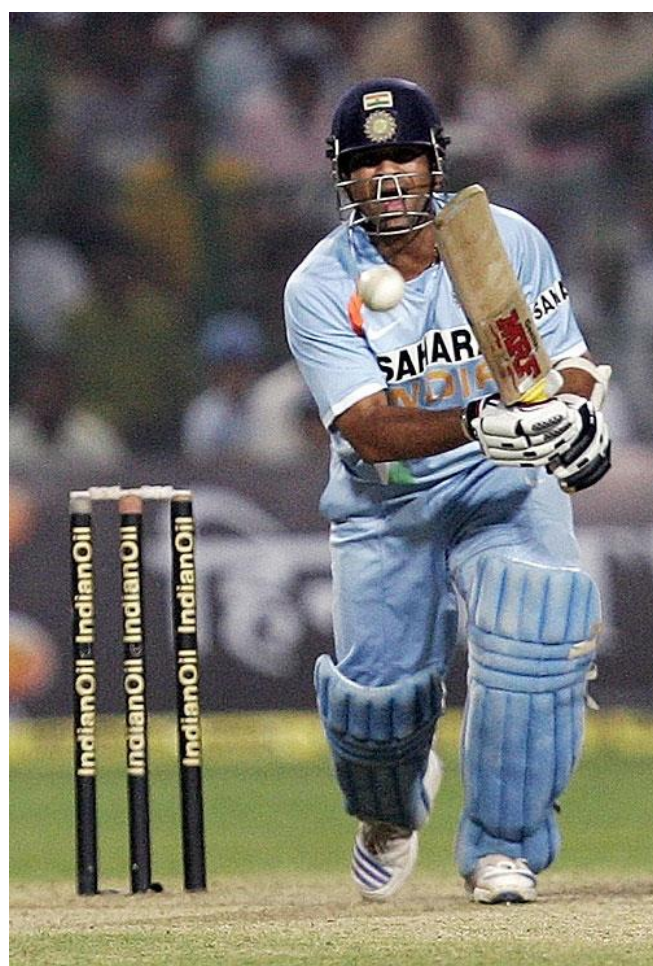
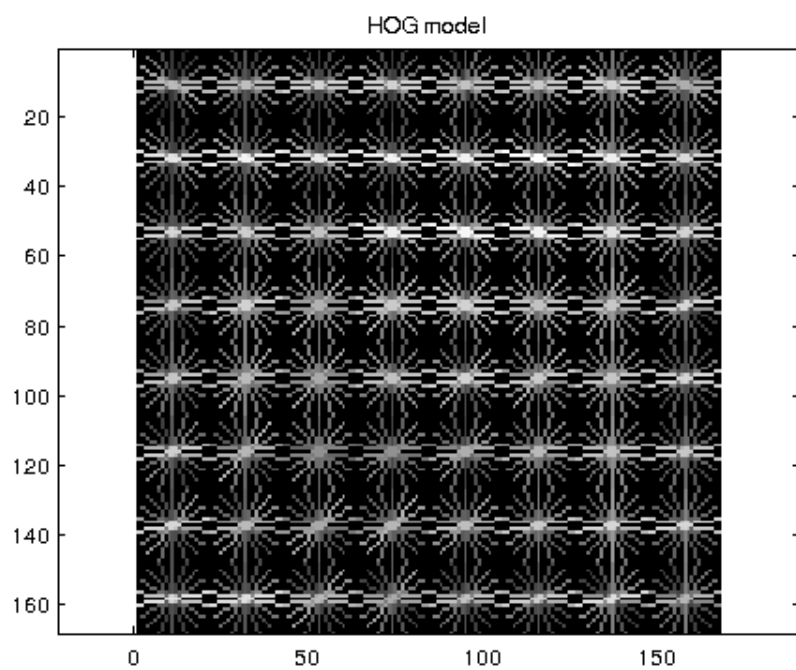
Observations for Cricket Bat :

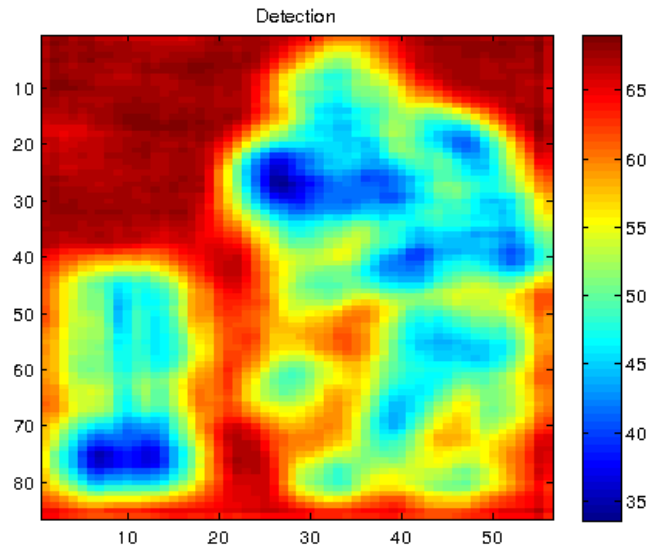
Training images (positive samples)



Average







Inference from observation :

- Improper model generation due to small dataset.
- Object occupies too small region in images hinders object detection.
- Objects is in various scales, thus this approach is naive.
- As we can see, model for ball is much better than that of bat, which means symmetry of object matters in this approach.