Bat-Ball Detection

Using Scaled Yolo V4

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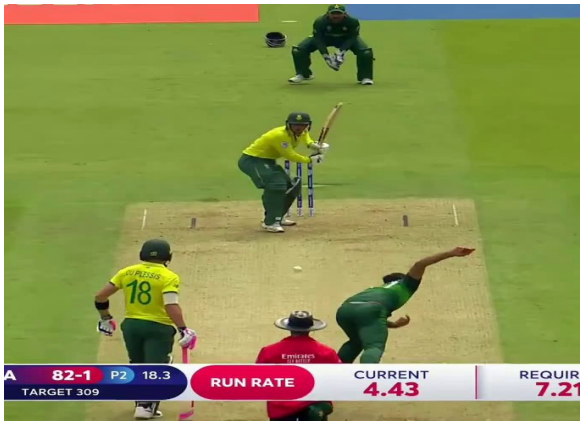
Problem Statement (Data Description)

- Cricket is a bat-and-ball game played between two teams of eleven players on a field.

- We want to detect Bat and Ball in the given images and videos.

Example of Dataset :-

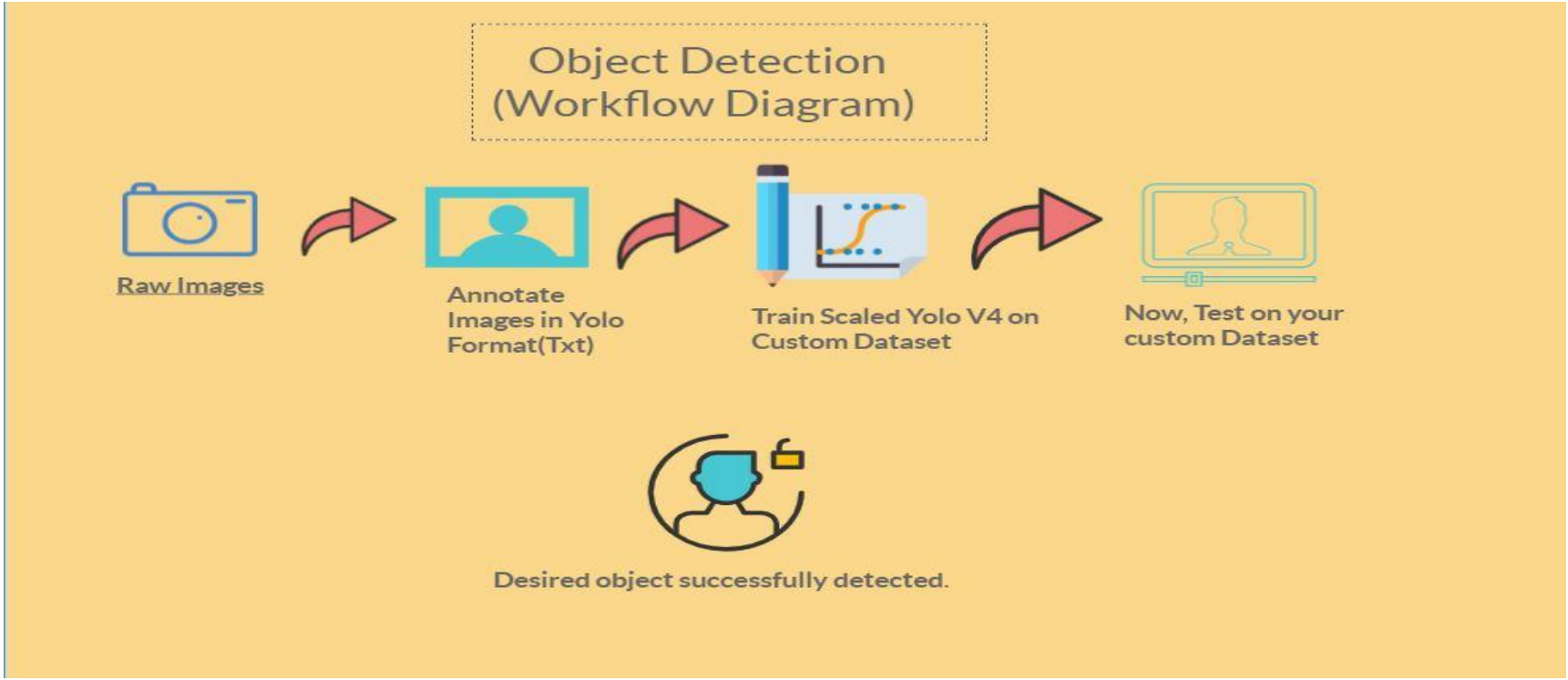


Model Used (Scaled YoloV4)

- YOLOv4 object detection neural network based on the CSP (Cross Stage Partial) approach.
- In Scaled Yolo V4 scales both up and down and is applicable to small and large networks while maintaining optimal speed and accuracy.
- For more detailed information .Kindly refer this:

(Link:-https://arxiv.org/pdf/2011.08036.pdf)

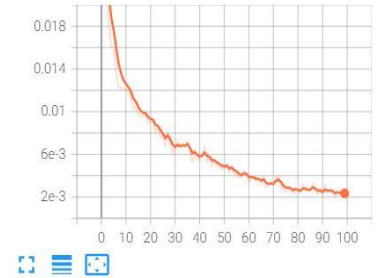
Workflow


Object Detection
(Workflow Diagram)
Raw Images
Annotate
Images in Yolo
Format(Txt)
Train Scaled Yolo V4 on
Custom Dataset
Now, Test on your
custom Dataset
Desired object successfully detected.

Evaluation of Custom Model

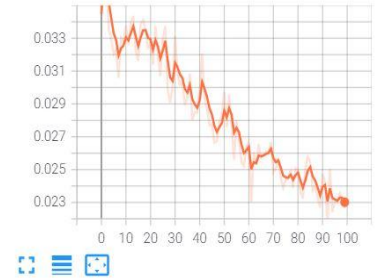
train

train/cls_loss
tag: train/cls_loss



train/giou_loss
tag: train/giou_loss

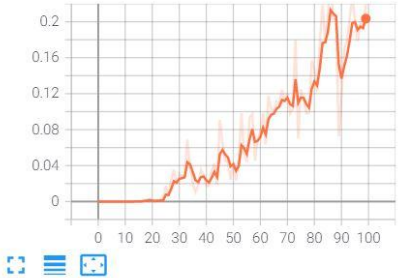
train/obj_loss
tag: train/obj_loss



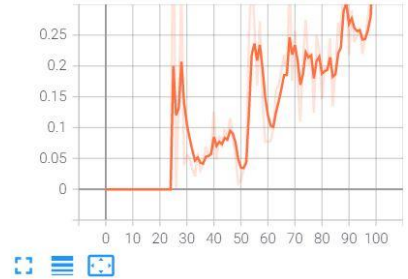
metrics

metrics/mAP_0.5
tag: metrics/mAP_0.5

metrics/mAP_0.5:0.95
tag: metrics/mAP_0.5:0.95



metrics/precision
tag: metrics/precision



metrics/recall
tag: metrics/recall

Results


Bat
Ball
Bat
Ball
Bat
Ball
Bat
Ball
Bat
Ball
Bat
Ball
Bat
Ball
Bat
Ball
Bat
Ball

Bibliography

- **Chien-Yao Wang, Alexey Bochkovskiy, Hong-Yuan Mark Liao**
  https://arxiv.org/pdf/2011.08036 (Scaled Yolo V4)

- **Roboflow** :- Upload files manually or via API including images, annotations, and videos. It supports dozens of annotation format.

  Link: https://roboflow.com/