Facial Features Pose Estimation

1) Model considered

   The YOLOv11-Pose estimation (medium) model was considered for this task which was trained using the ultralytics library

2) Labelling of the dataset

   The dataset labelling was done on the roboflow website by annotating the bounding boxes and the keypoints.

3) Data Augmentations considered

   - Horizontal Flip
   - Zoom out
   - Mosaic
   - Cutmix

4) Training Losses for different parameters

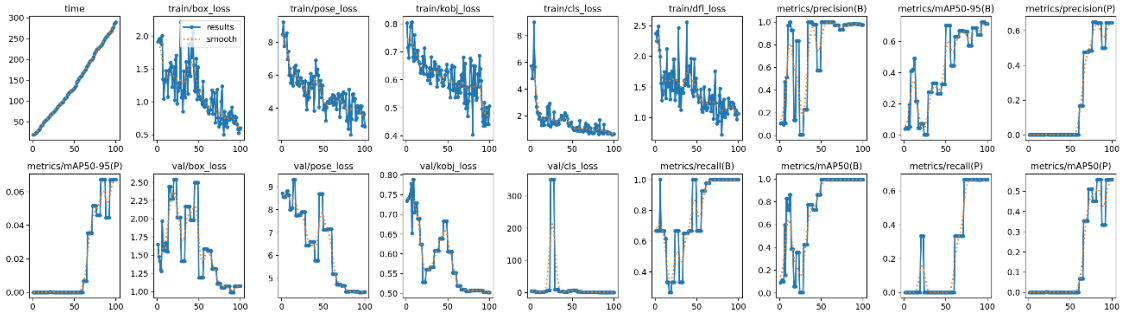
   Bounding Box Loss - Intersection over union
   Pose Loss - Mean Squared Error
   Key Object Loss – Binary Cross Entropy
   Classification Loss – Binary Cross Entropy

5) Metrics

   For Bounding Box and Pose

   - mAP50
   - mAP(50-95)
   - Precision
   - Recall

6) Training and Validation Performance



7) Inference results