Building the Model and Submitting Results

Step 1: Place all the annotated images (.json format) in a folder called 'Annotated_Data' on the hub.

Step 2: Run labelme2yolo (make sure package is installed)

Step 3: Go inside Annotated_Data/YOLODataset and take 'dataset.yaml' and put it in the home directory.

Step 4: Open dataset.yaml and change contents to the following: train: ./train/ and val: ./val/

Step 5: Go to the pre-existing 'datasets' folder in the home directory and create 2 directories called 'train' and 'val'.

Step 6: Cut and paste the train images (by ctrl+selecting because we can't drag and select) from Annotated_data/YOLODataset/images/train to datasets/train. Cut and paste the train labels from Annotated_data/YOLODataset/labels/train to datasets/train.

Step 7: Cut and paste the val images from Annotated_data/YOLODataset/images/val to datasets/val. Cut and paste the val labels from Annotated_data/YOLODataset/labels/val to datasets/val.

Step 8: Load the model using model=YOLO('yolov8n.pt'). The yolov8x.pt is better but requires GPU.

Step 9: Train the model.

Step 10: Visualize results by using results=img.imread('runs/detect/train/results.png'). NOTE: each training iteration will produce a different train folder so change accordingly (example: runs/detect/train5/results.png).

Step 11: For submission, make sure challenge_1_submission_images.zip is uploaded to the hub and run the unzipping function (needed only once).

Step 12: Make sure to load the best trained model by running model=YOLO('./runs/detect/train/weights/best.pt). Otherwise the last model would be used which might not be the best.

Step 13: Run the make prediction code in the notebook as normal. NOTE: if using the GPU environment, a change in the code is needed: remove the .numpy from conf_list=r.boxes.conf.numpy.tolist(), clss_list= r.boxes.cls.numpy.tolist(), and bounding_boxes=r.boxes.numpy.xyxy

Step 14: Run the last chunk of code to zip the submission results, and then you can submit the zipped folder on the EY website for a result!