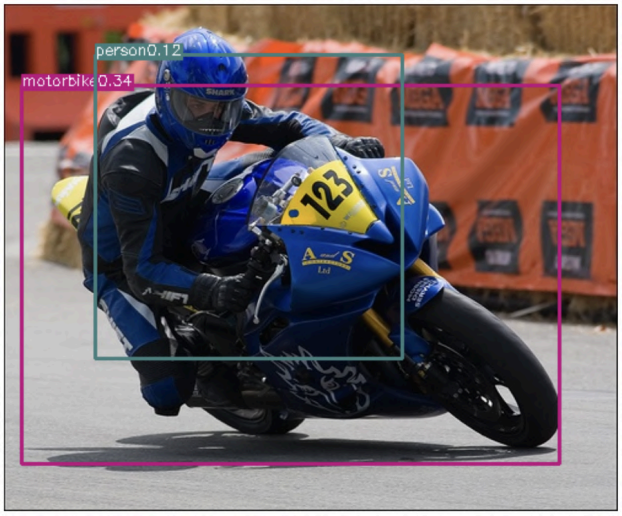
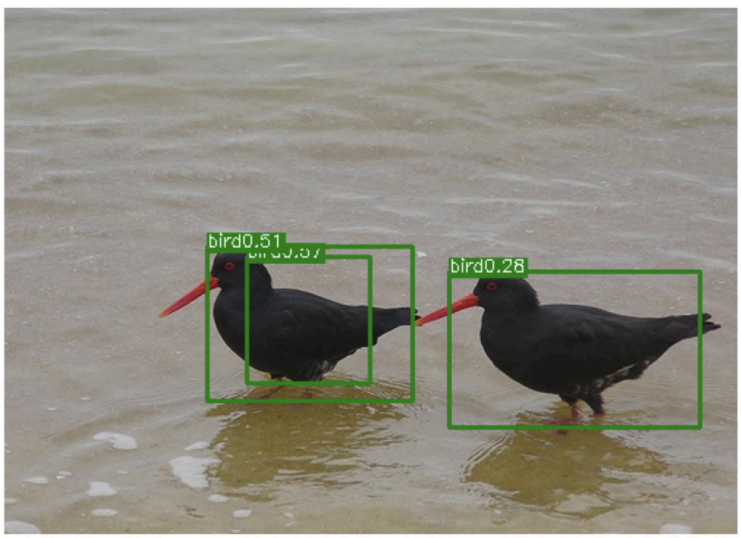
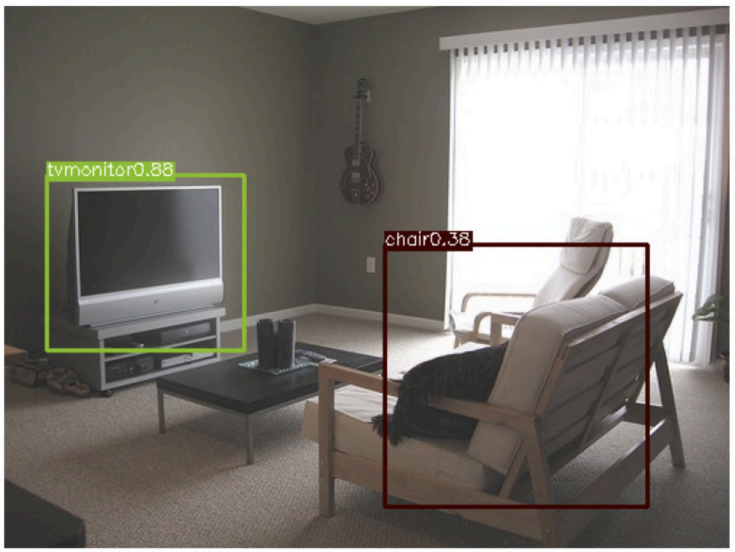
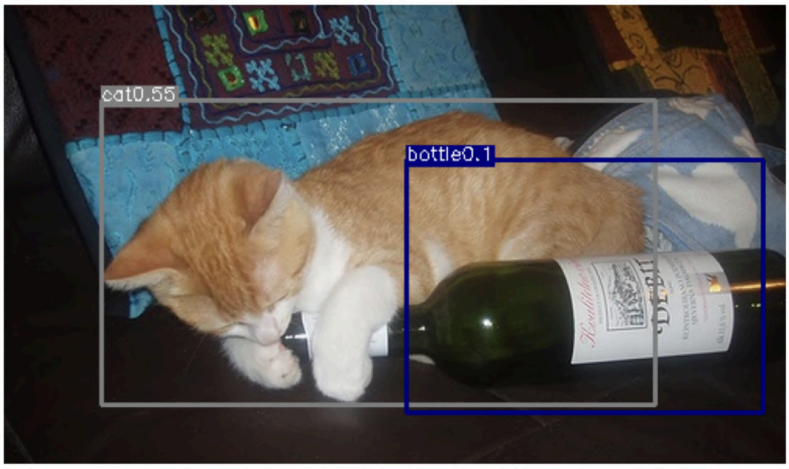
Report

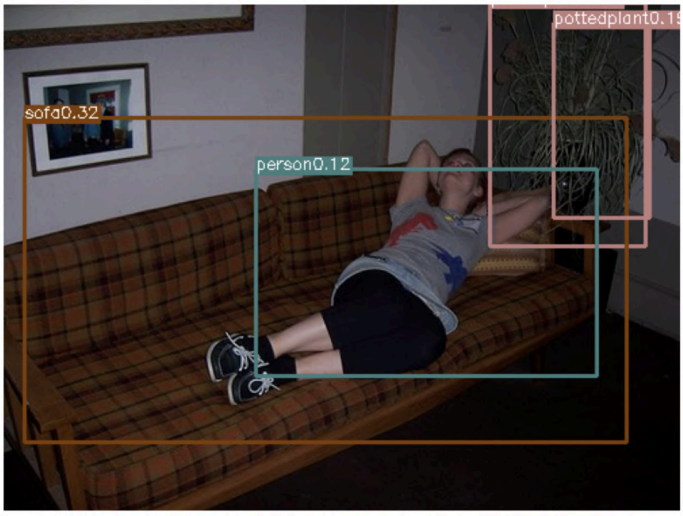
1. **My final loss value:** 0.5031
2. **Sample Images from my detector from PASCAL VOC:**



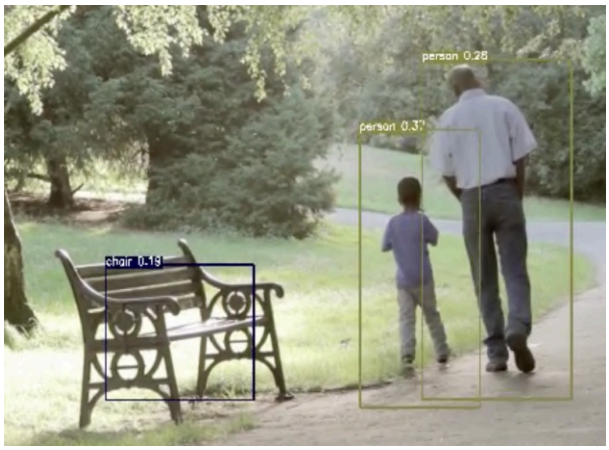


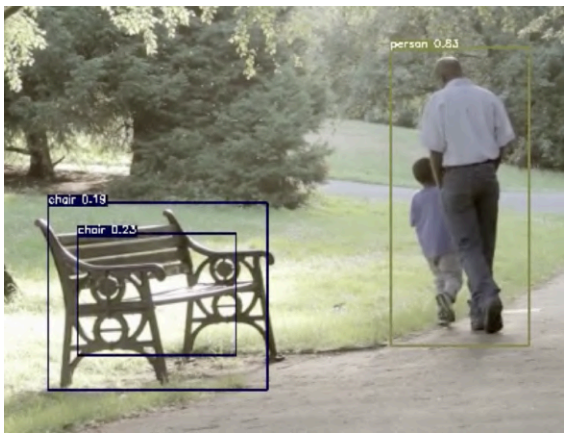


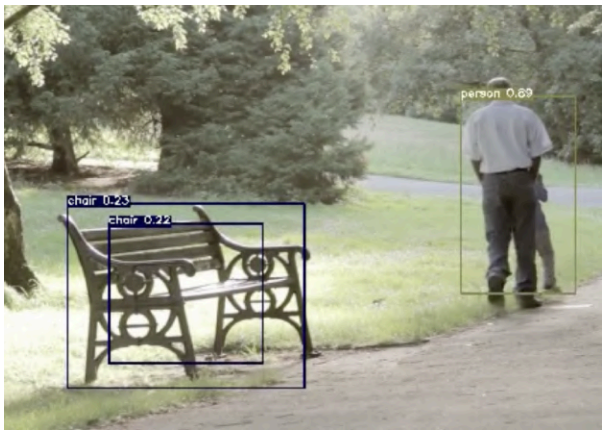




3. YOLO on the Video:







Additional Implementations: ConvNext YOLO

I also implemented a custom YOLO-style object detection model using a pretrained ConvNeXt-Tiny backbone, as shown in the code. The architecture modifies the final layers of ConvNeXt and adds custom convolutional layers to output bounding boxes and class predictions. The model was integrated with a YOLO loss function and trained using SGD with momentum.

During experimentation, I observed that the implementation was functional — the loss consistently decreased during training, indicating that the model was learning effectively.