

MAIS 202 - PROJECT DELIVERABLE 3

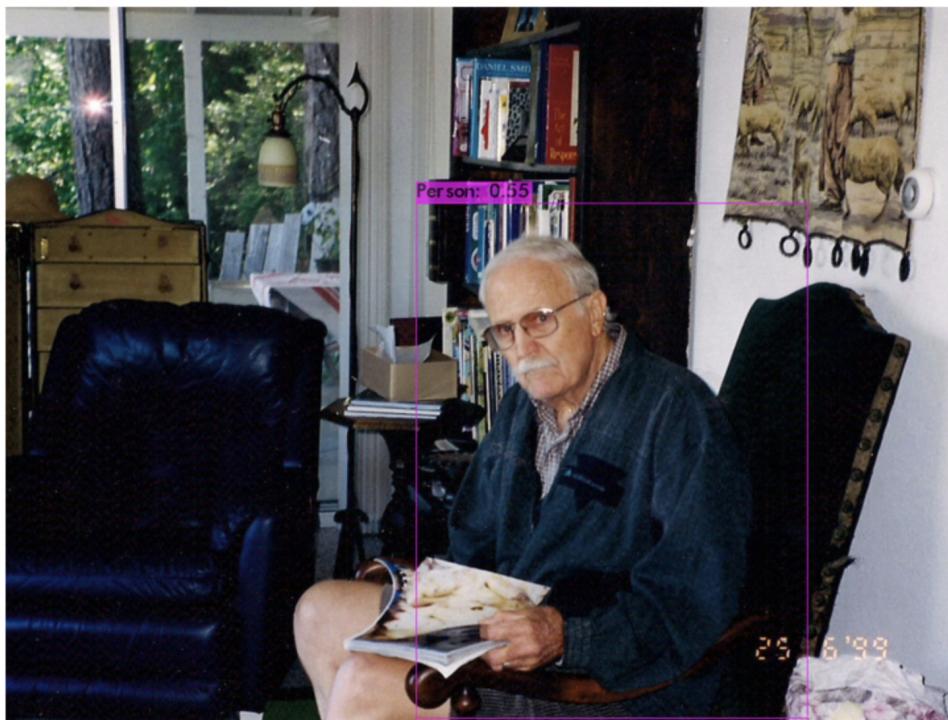
Home Invasion Detection

1. Final Training Results:

In the preliminary training stage, I had tried to train my yolov3 model on a dataset consisting of two classes: “Person” and “Furniture”, to account for a home-like environment in which the detection would be taking place. However, this proved ineffective and failed to optimize the confidence of detections. Some images containing “Person” subjects would not be properly labeled, and the confidence in prediction was low. To account for this, I aimed to train the model on a dataset solely consisting of “Person” subjects (without “Furniture” instances), and keeping the number of iterations the same. In other words, I further tailored my model to my project goal (detection of human subjects). Upon training my model with this new approach and testing its functionality on a few pictures (see below), the model is able to identify “Person” subjects, and do so with confidence even when the subjects seem to be in motion (see 4th example).

Predictions shown below took around 40 milliseconds.







2. Final demonstration proposal

To present my custom trained model, I hope to design a website in which I can display a video on which my model has conducted predictions (security camera style footage), as well as briefly introduce the aim of this project. As I have yet to design my own website, I will consult previous workshop slides detailing how to develop a web app.