As I described earlier, this is an autonomous vehicle simulation software. The code basically renders a camera at the top of the dodge vehicle. The images taken by the camera are processed and then fed to a machine learning model to classify the detected objects. In the code, a frequent check is done to see if any of the classified objects(by the ML model) were human/pedestrian, in this case, commands are sent to the vehicle to STOP!

File description:

-collision\_detection.mp4 -> a demo showing the vehicle stopping once a person was detected.

-detection\_saved\_images -> contains images with bounding boxes around detected persons with confidence level(number of how sure an object is what the model think it is)

-yolo\_detector.py -> this code handles the capturing and classification of objects in the street. YOLO (You Only Look Once) is a real-time object detection algorithm

-longitudinal controller.py -> this node(code block) listens to a signal from the node created in yolo\_detector.py, if the proper signal was received, stopping commands will be applied.

-coco.names -> these are the object classes(dog, cat, person) used by openCV(image processing library)

-yolov3.cfg and yolov3.weights are files related to the machine learning model.

-PEAS analysis.pdf -> PEAS analysis!