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**Daily Logs**

**Monday, September 23:**

I began researching how to use YOLO to train a program to identify an object in a set of images and now have 2 good articles to read.

**Tuesday, September 24:**

I read the two articles on how to train YOLO. One article was a more general overview of the process that focused on what I need to download and different versions of YOLO I can use, and the other was more detailed and broke the process into different programs that need to be coded. The most important thing I learned was that, although the BBox Label Tool visually draws bounding boxes around the images in a training set, it also uses these drawings to record the vertices of the bounding box around an image in a text file and then uses these coordinates to train - not the marked images. My next steps are to convert the BBox Label Tool’s coordinates into the ones used by YOLO, divide the annotated photos into a training set and test set, install darknet, create the 3 necessary configuration files, and determine the right number of iterations to prevent overfitting.

**Thursday, September 26:**

Today I converted the coordinates from the BBox Label Tool into the coordinates YOLO can use. The BBox Label Tool provides information about the coordinates of the vertices of the bounding box, but YOLO needs the height, width, and center of the bounding box. I also separated the photos so some are in the training set and some are in the test set. Now I am looking into how to install darknet on my Windows computer, and it seems like the way to do this is through CUDA.

**Timeline:**

|  |  |  |
| --- | --- | --- |
| Week | Goal | Met? |
| 9/9-9/13 | 1.Use OpenCV to pre-process all images so they are monochrome  2.Use the BBox Label Tool to draw bounding boxes around the handicap parking passes in each photo in the training set. | Yes |
| 9/16-9/19 | 1.Install tkinter  2.Use the BBox Label Tool to draw bounding boxes around the handicap parking passes in each photo in the training set. | Yes |
| 9/23-9/26 | 1.Research how to train a program to detect a custom object in YOLO  2.Begin writing training program | Yes |
| 9/30-10/3 | 1. Finish installing darknet  2.Create 3 YOLO configuration files | No |
| 10/7-10/10 | 1.Determine correct number of iterations to prevent overfitting  2.Finish writing training program and try to run it | No |

**Reflection:**

This week, I researched how to train YOLO to identify a custom object and have a fairly good understanding of how the process works and what steps I need to take to complete it. I think this was a good experience interacting with the online programming community to read articles describing what I am trying to do and learn from the experiences of others. I have also never used GitHub before this project, and I was surprised to find that GitHub has a lot of useful descriptions of different processes in their ReadMe files. I also showed you my demo of the BBox Label Tool this week.