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**Daily Logs**

**Monday, September 9:**

Edited BBox Label Tool source code to correct syntax errors and adjust default names of directories and images to match my file organization system

**Tuesday, September 10:**

I used OpenCV to research and test out different ways to pre-process my training set so it is monochrome. I considered grayscale, adaptive mean thresholding, and adaptive gaussian thresholding. I ultimately decided on adaptive gaussian thresholding. I thought thresholding made the handicap parking passes easier to identify than grayscale because it reduces the amount of detail, and I picked adaptive gaussian thresholding over adaptive mean thresholding because the coloring weights are more consistent between different images. I then coded a program that filtered all of my training set images with adaptive gaussian thresholding.

**Thursday, September 12:**

I tried to run the BBox Label Tool on my new pre-processed training set, but I got an error on the lines that imported PIL and tkinter, both of which are necessary for the BBox Label Tool. I was able to import Pillow, which is similar to PIL, but still cannot import tkinter. I tried a lot of suggested methods online, including updating Python, installing tkinter through the System Interpreter, installing libraries that are versions of tkinter like EasyTkinter, installing tkinter through the terminal, checking that the capitalization of tkinter was correct for my version of Python, and importing the “future” library. I also installed ActiveState, and my plan for next class is to use that to get tkinter.

**Timeline:**

|  |  |  |
| --- | --- | --- |
| Week | Goal | Met? |
| 9/3-9/5 | 1. Research types of handicap parking passes  2. Create a training set for handicap parking passes in that hang in car windshields  3.Figure out how to use the BBox Label tool to draw bounding boxes | Yes |
| 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. | Not entirely. I successfully pre-processed the training set images, but I could not draw bounding boxes on them because I could not install tkinter. However, I did set up the BBox Label Tool to be ready to do this once I can import tkinter without an error. |
| 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.  3.Watch tutorial videos on training a program to detect a custom object in YOLO | No |
| 9/23-9/26 | Begin writing training program | No |

**Reflection:**

I encountered the unexpected difficulty of not being able to import tkinter in the BBox Label Tool. I tried a few different ways of installing it, but was unsuccessful. My next plan is to use ActiveState’s Python documentation to install tkinter. I have already edited the BBox Label Tool code so it is ready to be used to draw bounding boxes around the training set images once I can install tkinter. I was also successful in pre-processing all of the training set images using adaptive gaussian thresholding. This pre-processing simplifies the images and hopefully will make the handicap parking passes easier to identify. This pre-processing also removes color from the photos, which will allow me to use one training set to create a program that identifies handicap parking passes that look similar but are different colors.

Original Photo: With adaptive gaussian thresholding:

 