

Daily Log

Monday November 18

Attempted to use a secondary drive with my laptop to install a Linux OS to allow neural net training to use GPU processing power. I ended up running into similar issues to the ones I previously had with dual-booting; the Linux OS I was booting from off of a USB was unable to recognize the new drive in the installation process.

Wednesday November 20

Started re-annotating about 500 images that were clumped together and disorganized somehow during the upload process. Did further research on optimization of darknet algorithm to improve accuracy once I start training, found that I may want to include more images in training (2000 per class of object was recommended).

Friday November 22

Finished re-annotating the 500 disorganized images. Began preparing newer images for annotation so I can start to work towards a higher object count for improved accuracy with training in the future. Wrote a small program to go through my annotated images and return the total number of annotated objects by class, which should help with the aforementioned goal. Started working on the readme file for my github repo. Attempted to access the TJ cluster through SSH but ran into issues.

Timeline

Date	Goal	Met
November 11	Continue and finish training of full neural net, start training of separated sets, fix broken image sets	Fixed part of the broken image sets, was unable to finish training due to GPU issues
November 18	Continue and finish training of full neural net, work on improving accuracy of best neural network, start training of separated sets	Fixed image sets, was unable to continue training
November 25	Continue and finish training of full neural net, work on improving accuracy of best neural network, start training of separated sets	
December 2	Modify GUI to resemble final product, enable image detection through GUI	
Winter Goal	Have a GUI program that can take an input of a directory of images and attempt to classify animal objects detected in the images with a minimum accuracy of 75%.	

Reflection

At the beginning of the week I tried the final option I had come up with for solving my GPU problem, which was installing a completely separate SSD drive that I would install a version of Ubuntu from a USB drive that had already been prepared, and then use that drive for future training of the neural network, hopefully being able to fully utilize the GPU I had access to. Sadly this didn't pan out well, and the installation software was unable to detect the new drive, and I was unable to find a fix for the issue. I then began to focus on other parts of the project that I could work on while continuing to look for solutions to my GPU issue, which mainly focused around re-annotating the 500 mislabeled images, which should definitely help with training. I also read up more on darknet accuracy improvements, and found that a larger number of images than I expected was suggested for best accuracy, specifically 2000 instances of a class of object for each class being trained on. I then started preparing some newer images to be annotated as a side goal I could work on once I got training to work again.