Here is a brief report of what we have been up to in the past several weeks. We have collectively focused our efforts into doing research and attempting to implement what we have learned. Most recently we have been looking into using Keras and Tensor flow which are technologies used to do image recognition. With what we learned we were able to put together some code and test some of the material we learned from pyimagesearch.com. Some other things we have been looking into are algorithms for clustering and the possibility of using siamese networks in one shot recognition for the categorizing of the images.

As far as some of the code we have written, attached, the first was a simple implementation of keras and tensor flow in running one image through at a time and analyzing what the extense the imagenet labeling capabilities would achieve given a few test images and the power images given to us by Wal-Mart. The results we found were pretty limited as most images, especially from the provided dataset, were labeled incorrectly. Analyzing the results however, we saw that several of the different items that were similar, even though labeled incorrectly, were all labeled similarly. We believe that even though imagenet has a limited number of labels it still might be possible to use the labels returned to group the items in the dataset.

After testing some of the initial capabilities of keras paired with tensor flow we wrote another simple program, reusing most of the ideas in our single image keras code, to try and run the labels on the entire power dataset. Attempting this we realized that, even running it on one of our personal machines with a nvidia geforce gtx 980 4gb, we did not have the computing power to run through more than the first handful of images before the entirety of the gpu’s computing power was beyond allocating all 4gb the graphics card had to offer. Indicating that we will be needing a whole lot more of computing power to run even a simple imagenet algorithm on the entire dataset. Also, there might be some optimizations in the code we have written that we are unaware of that would free space on the gpu after it has finished an image to help with performance and allowing the program to finish. Another attempt with slightly different code allowed us to store the labels and percentages for a few more images before running into an error.

Thanks,

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