Image compression using deep learning

Student: Kevin Duarte
Mentors: Dr. Boqing Gong
Yang Zhang

What I have accomplished

- I have finished making a CNN that resizes grayscale images to ¼ the original size
- I have extended this CNN to resize color images as well
  - 32x32 images were resized with an accuracy of 85%
  - 96x96 images were resized with an accuracy of 71%

Current Work

- Now that I have the encoder, I have begun creating the decoder for the autoencoder
- I am currently training the autoencoder on the cifar10 dataset (50,000 32x32 images)
- The loss in the output image is low, so my implementation looks as though it is working well.

Coming Weeks

- Once I am done training the autoencoder, I plan on adjusting it to obtain lower losses
- I will try to make the autoencoder work on larger images
- I will test different autoencoder structures, to see if I can get equivalent losses with even greater compression
    - Currently, I am compressing the image to ¼ size, but I will see if I can compress the images to 1/16 size without a large change in the loss