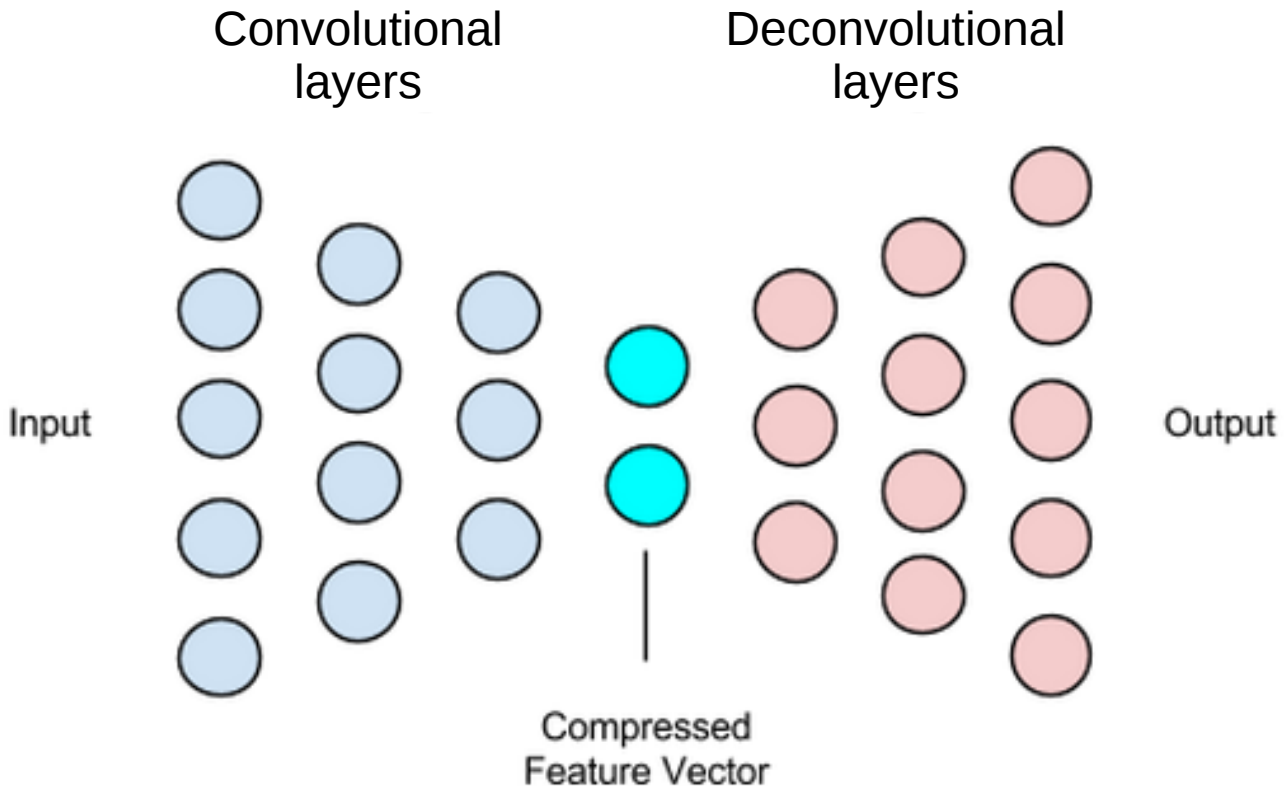
Image compression using deep learning

- The goal of the project is to create a CNN auto-encoder that compresses and decompresses an image
- Convolutional layers will compress/encode the images and deconvolutional layers will decompress/decode the image

Auto-encoder



What I have accomplished

- Learned how to create neural networks in tensorflow and keras
- Created CNNs for classification (using the MNIST and Cifar10 datasets)
- These CNNs had two convolution (followed by max pooling) layers and two fully connected layers:

  - MNIST classification accuracy was .9772

  - Cifar10 classification accuracy was .5488
- Tested how different loss functions (cross entropy, L_2, and mean-squared error) effected classification

Current Work

- Working on resizing images using CNNs.
- Have CNN with two convolutional layers and one fully connected layer that can scale grayscale images to half size with a ~65% accuracy.
- Currently trying to adjust the implementation to increase accuracy.

Coming Weeks

- Now that I have access to the cluster, I will be able to train a CNN to resize larger images, and will work on color images.
- Once that is complete, I can begin working on the deconvolutional half of the auto-encoder