# 

CS-405 Deep Learning Fall 2023

Lab 13

**Autoencoders**

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# Required Changes:

1. **Dataset Preprocessing:**

The normalization values in the transforms need to be adjusted for RGB images. For CIFAR-10, the normalization should use (0.5, 0.5, 0.5) for both mean and standard deviation.

1. **Network Architecture:**

**Input Layer:** The first convolutional layer of the network should be modified to accept 3-channel input, corresponding to the RGB format of CIFAR-10 images, instead of the single grayscale channel of MNIST.

**Output Layer:** Similarly, the output layer of the decoder needs to output 3 channels for the reconstructed RGB image.

**Layer Dimensions:** Due to the difference in image size (32x32 for CIFAR-10 vs. 28x28 for MNIST), the dimensions of the layers and the architecture might need slight adjustments to ensure the output image has the correct dimensions.

1. **Visualization Functions:**

**Display Function:** The view\_recon function needs to be updated to handle 3-channel images for displaying CIFAR-10 data. This involves modifying the plotting code to correctly render RGB images.

1. **Training Loop:**

In the training loop, the hyperparameter number of epochs is modified to 30.