

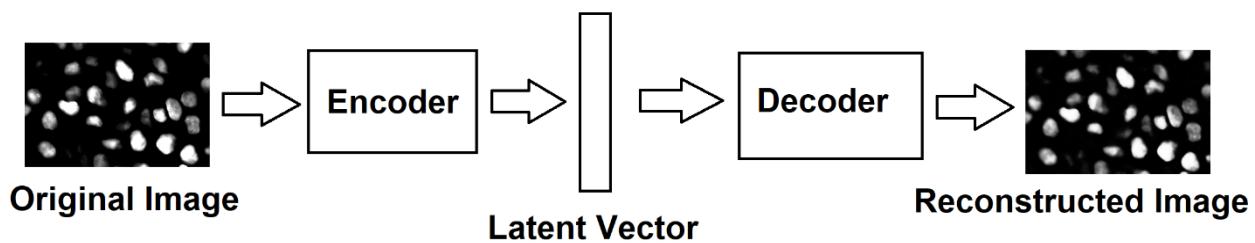
February 26th, 2019

Major Changes

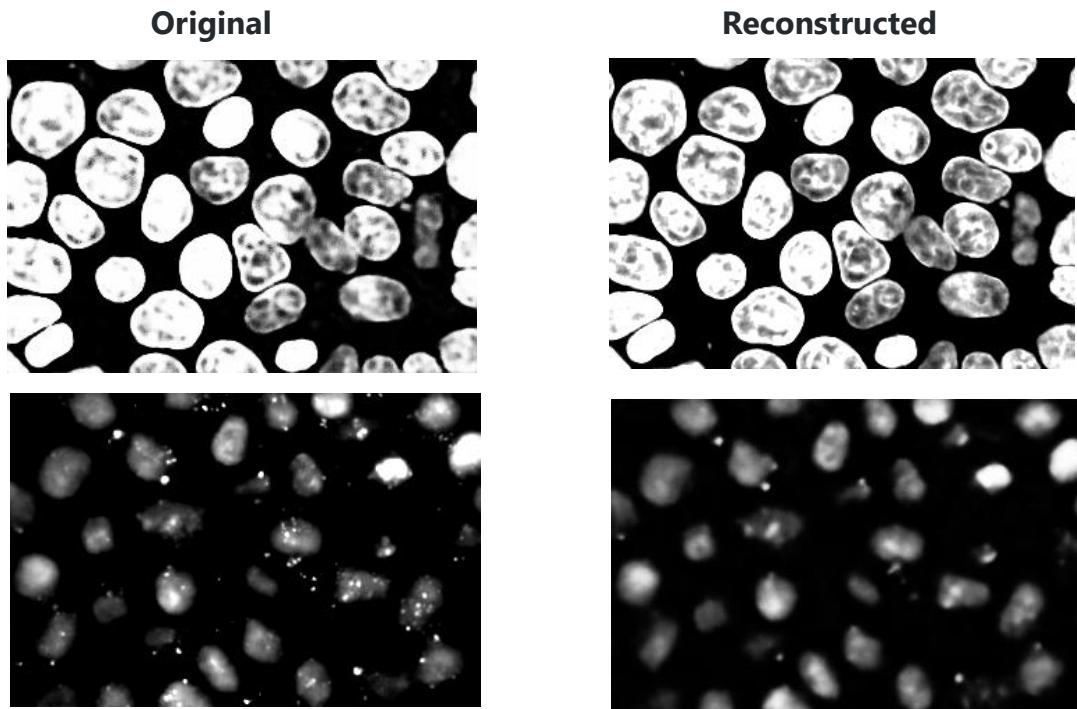
There were no major changes to the project.

Accomplishments

I decided to break down the development of the model in 3 different steps and components. The first step/component is just a regular autoencoder.

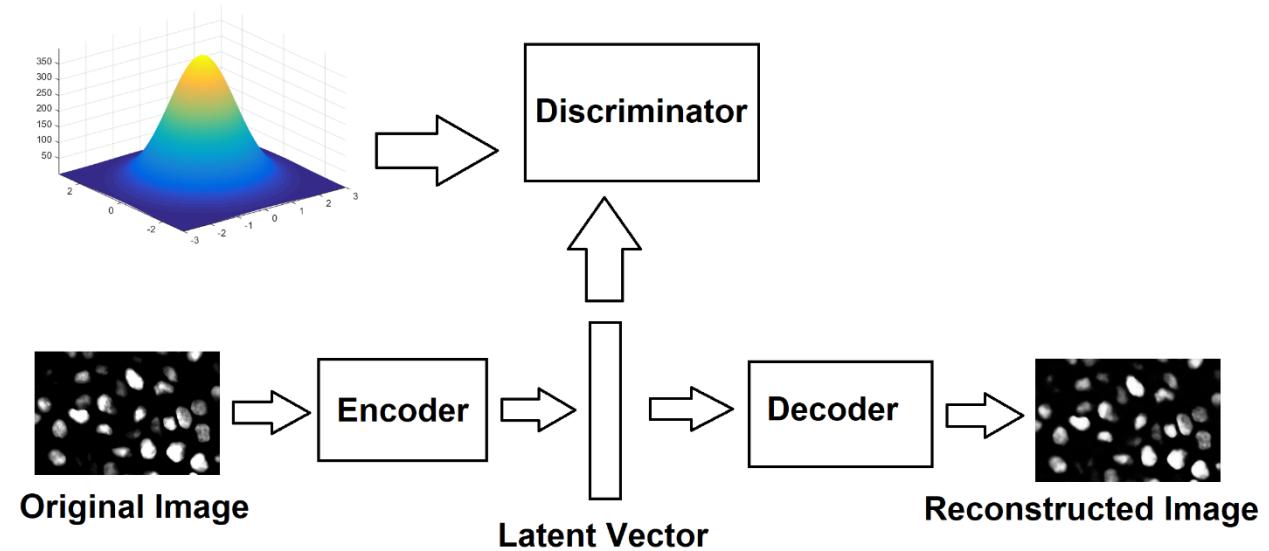


I have successfully built and trained the autoencoder. I trained a total of 13 different models, 1 for each fluorescent marker. Some of the results are shown below:



The purpose of this step is to ensure that my neural network's architecture has to capacity to capture and compress key features of the image into a latent vector. From the result, it appears that the model can reconstruct the image decently, and therefore, capturing important features. The image is slightly blurry, which could be concerning. I will address this issue with Professor Murphy to determine the importance.

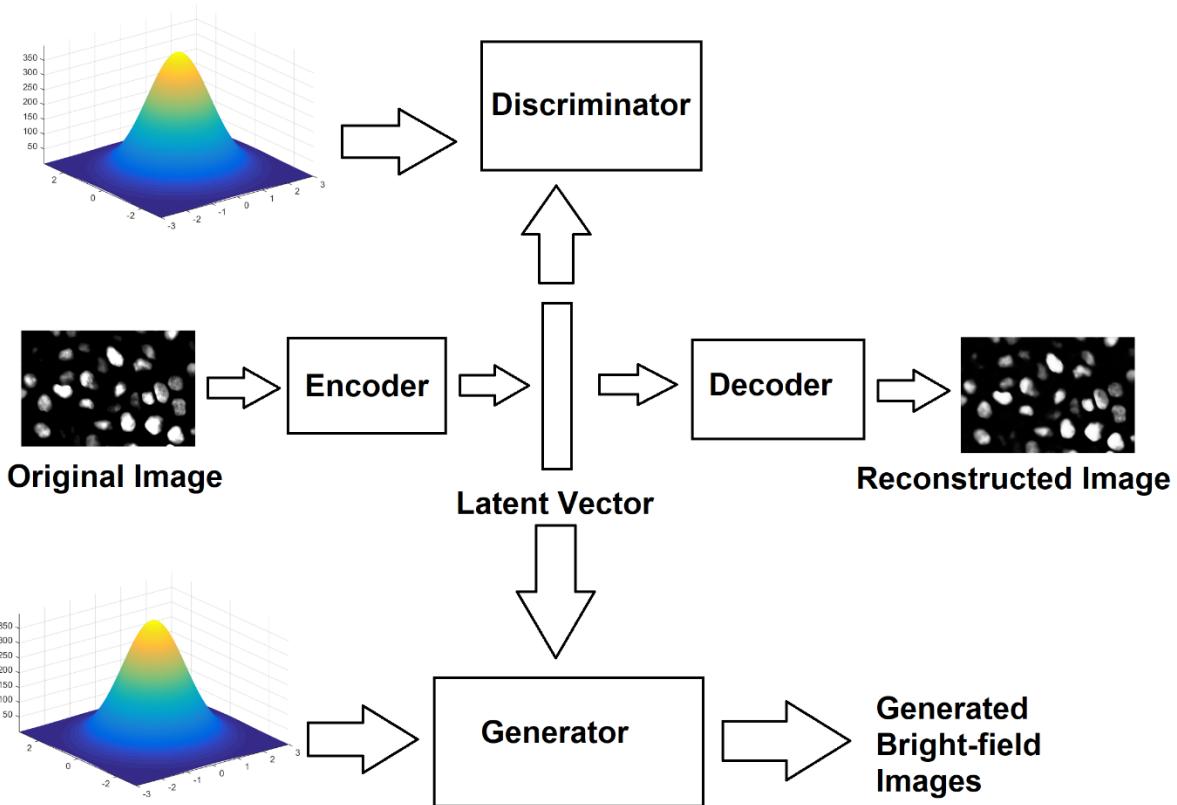
The second step/component is the expand the autoencoder to an adversarial autoencoder.



I built the model and is in the process of training the model. The purpose of this step is to ensure that the latent vector follows a gaussian distribution. This will give a generative model and the ability to generate arbitrary images by drawing from gaussian distribution, in case there is a lack of images for a particular fluorescent marker.

The final step/component is to use the latent vector from adversarial autoencoders coupled with a deep convolutional generative adversarial network (DCGAN).

I built most of this component, but the final design is dependent on the success and output of the previous step. Thus, I will finish building this component when I successfully train the adversarial autoencoder from the previous step.



Meeting Milestones

I have successfully built most the model and is in the process of training the model.

Surprises

There were no surprises.

Milestones Revisions

No revisions at the moment.

Resources Needed

No resources is needed at the moment.