Memory Drawings-to-Scenes Translation

By Ran Xu and Ella Dagan

Inspired by

Drawings of real-world scenes during free recall reveal detailed object and spatial information in memory

Wilma A. Bainbridge, Elizabeth H. Hall & Chris I. Baker

Dataset of 2682 Scene Drawings

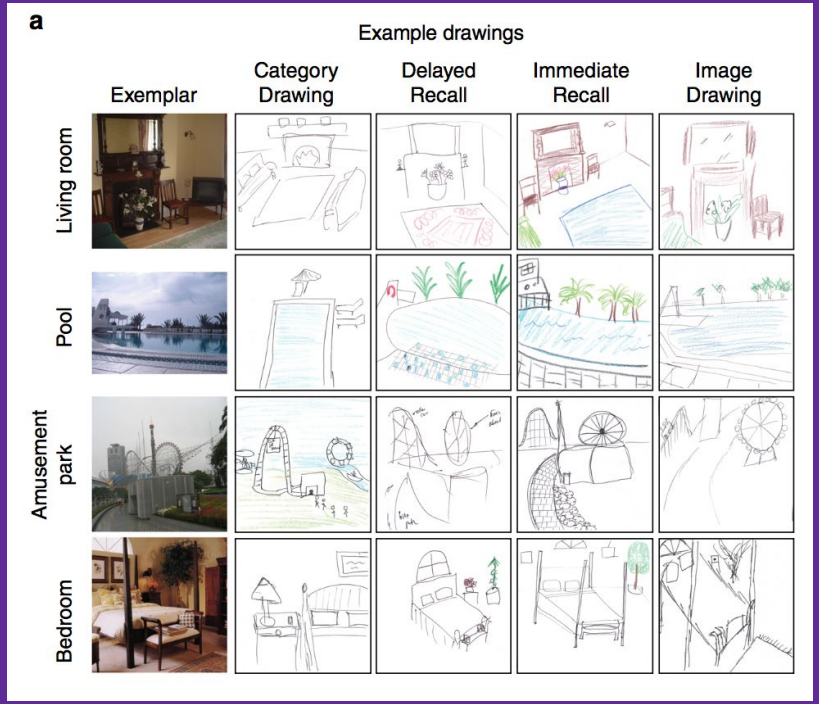


Image-to-Image Translation with Conditional Adversarial Networks

Phillip Isola, Jun-Yan Zhu, Tinghui Zhou, Alexei A. Efros

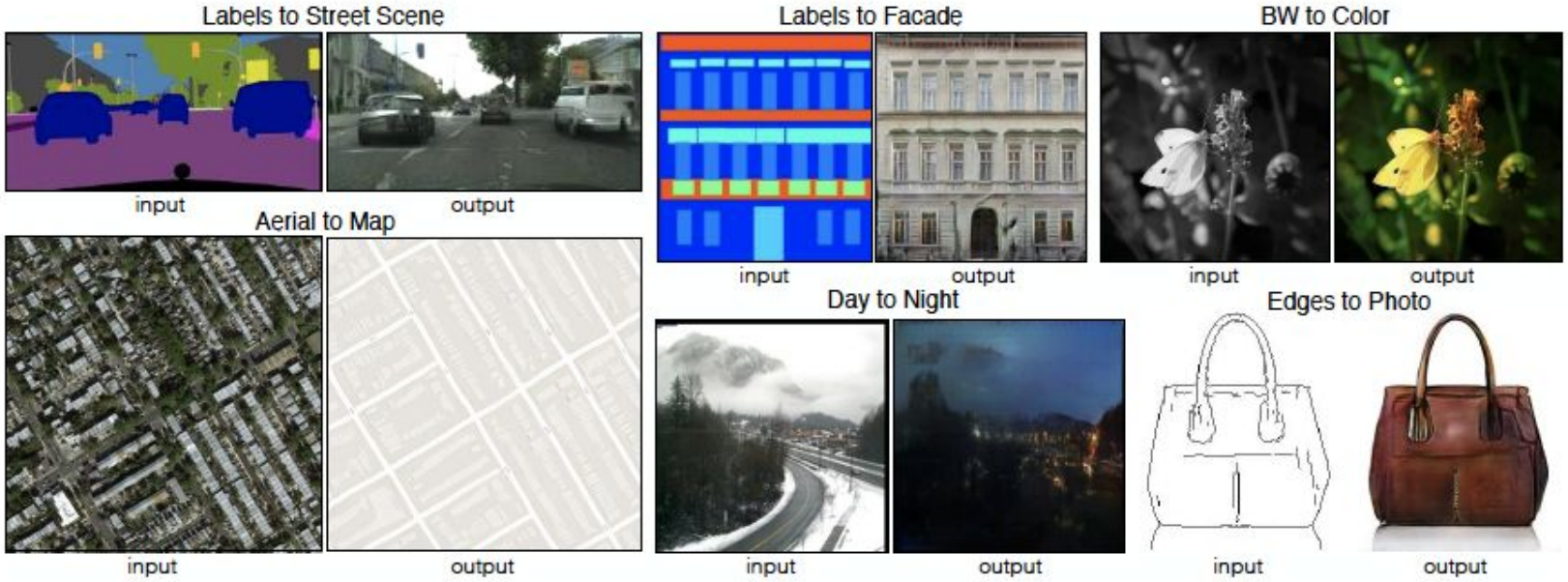
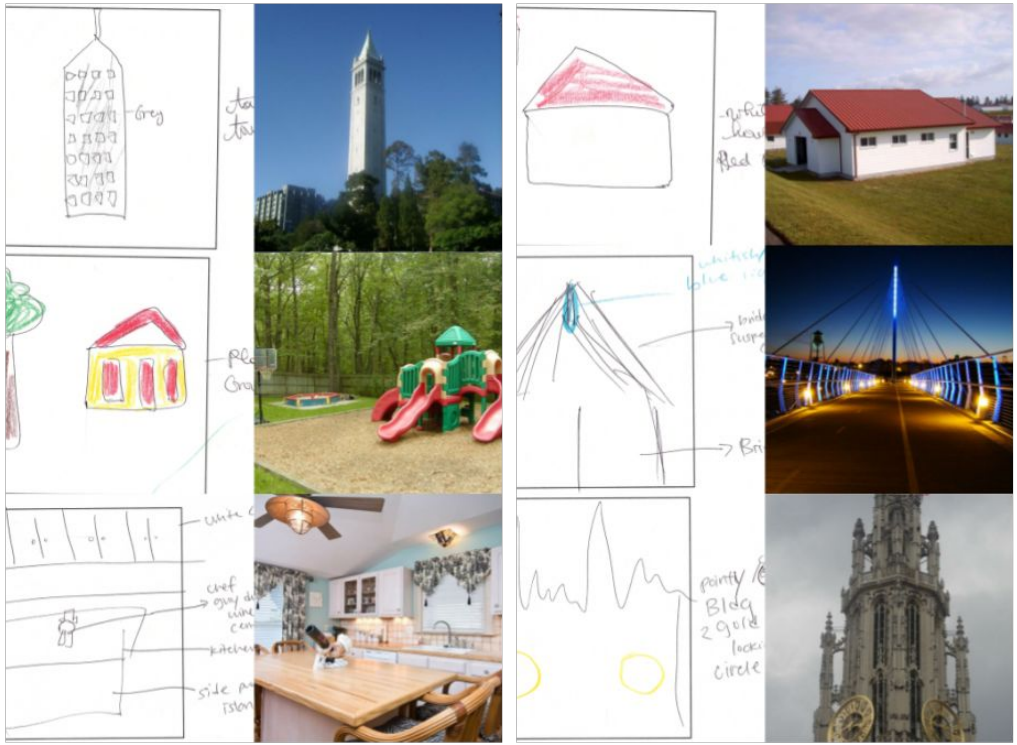
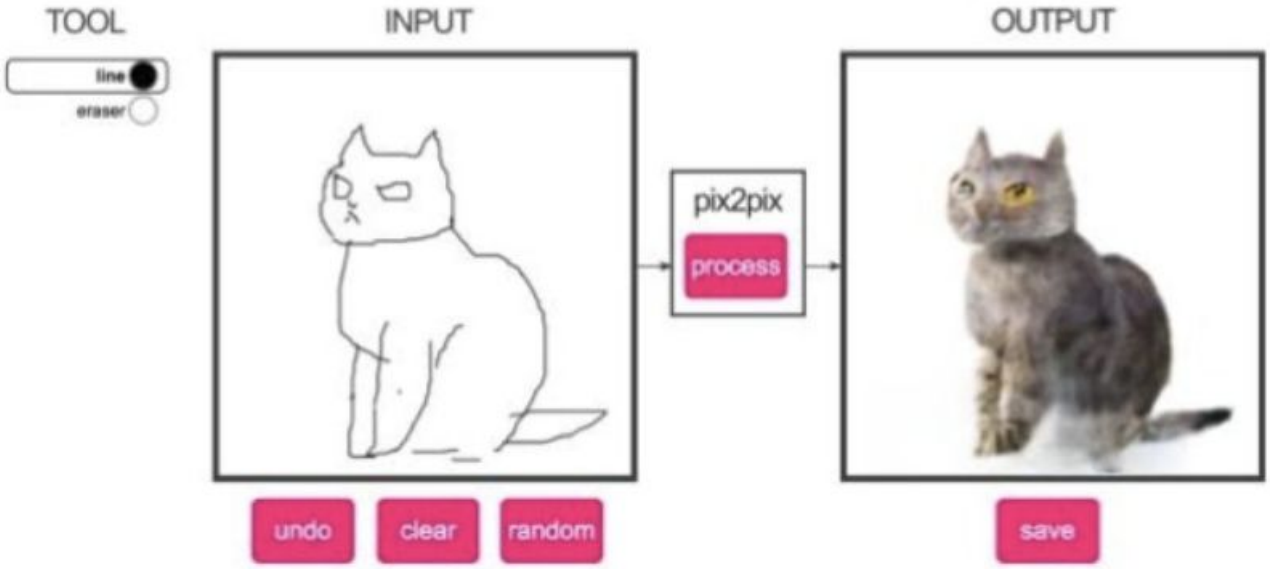


Figure 1: Many problems in image processing, graphics, and vision involve translating an input image into a corresponding output image. These problems are often treated with application-specific algorithms, even though the setting is always the same: map pixels to pixels. Conditional adversarial nets are a general-purpose solution that appears to work well on a wide variety of these problems. Here we show results of the method on several. In each case we use the same architecture and objective, and simply train on different data.

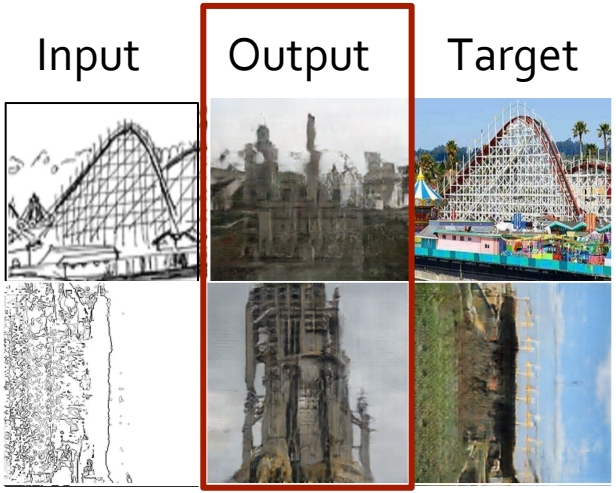
Prepared Dataset & Trained

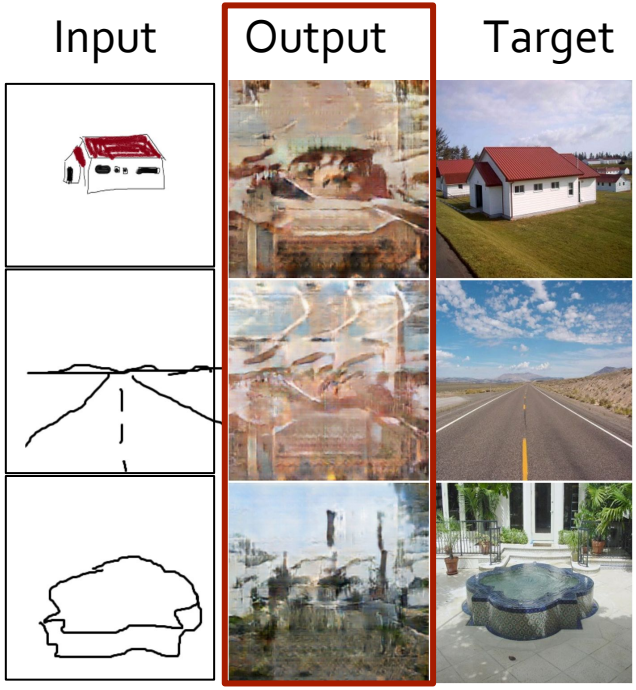


EdgesCats Demo | pix2pix-tensorflow | by Christopher Hesse

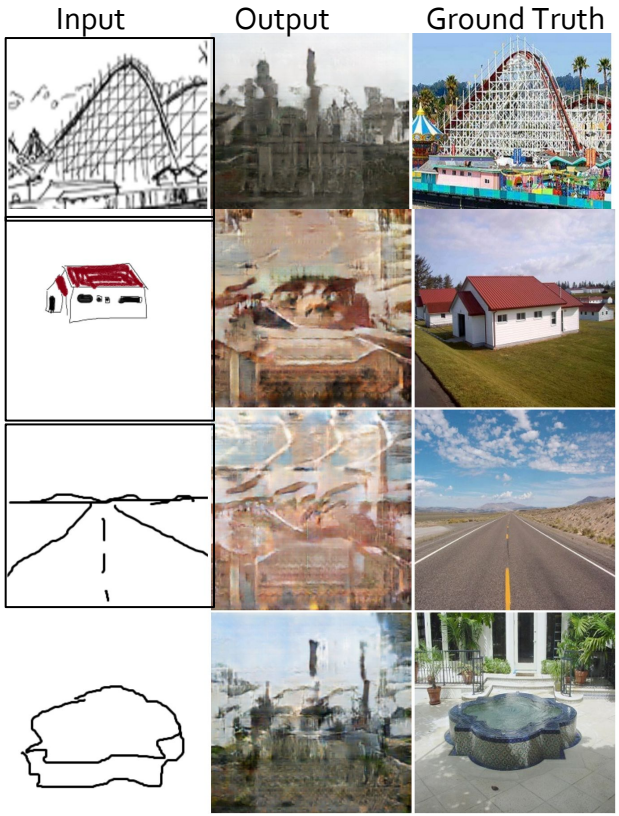


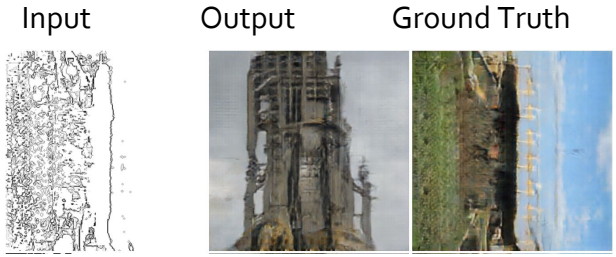
Results (epoch 200)



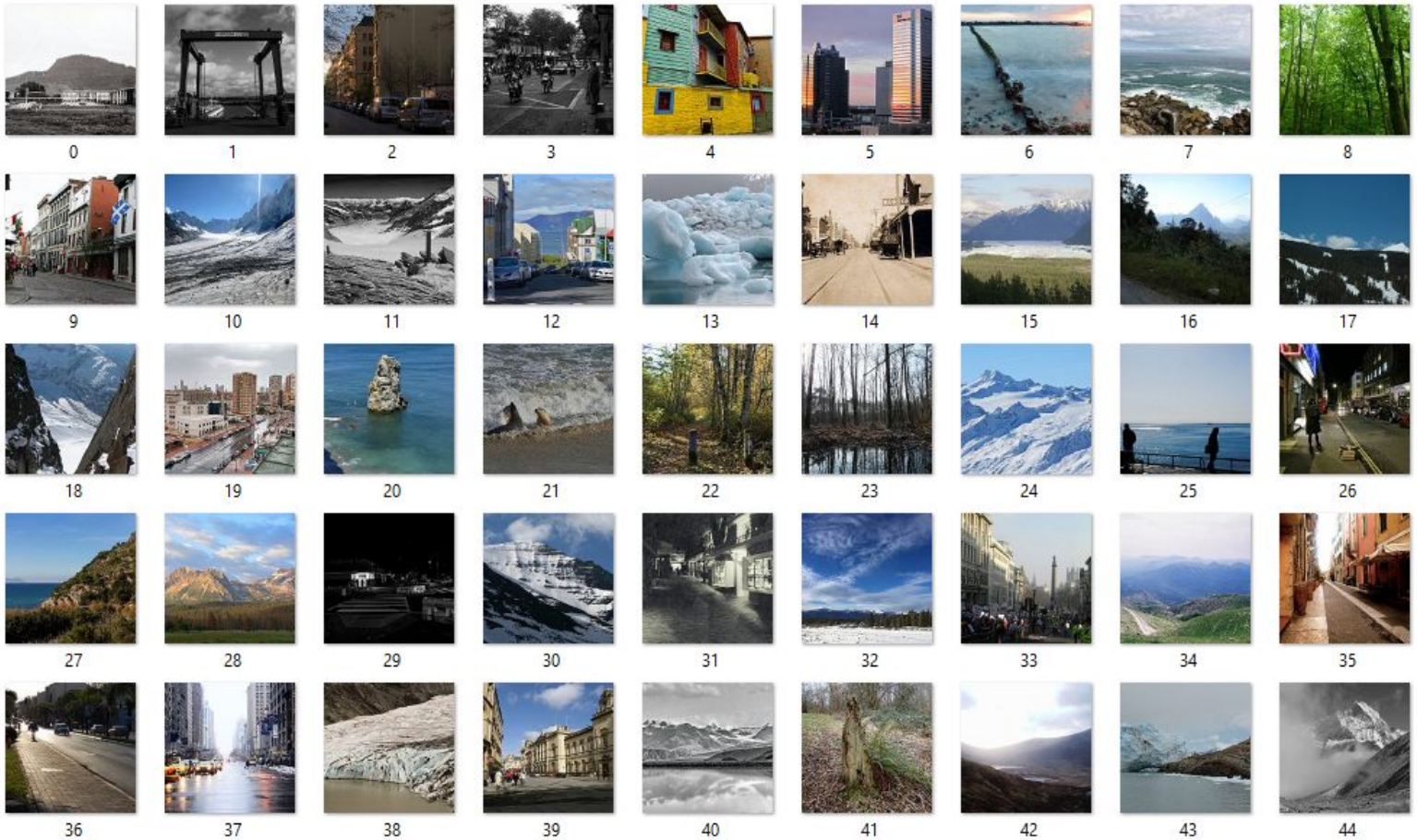


Results (epoch 200)





new dataset: 24,335 images of scenes

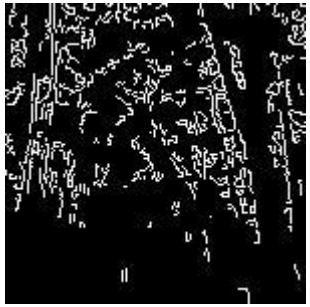
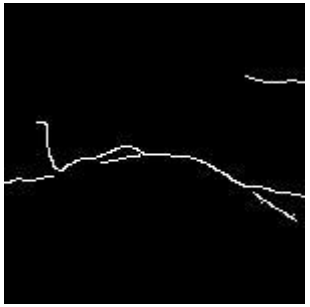
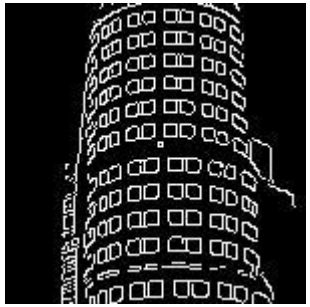


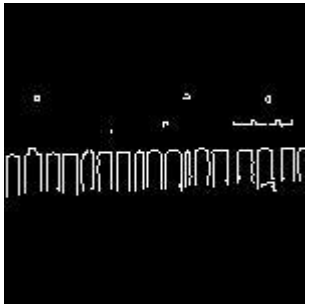
Getting Edges



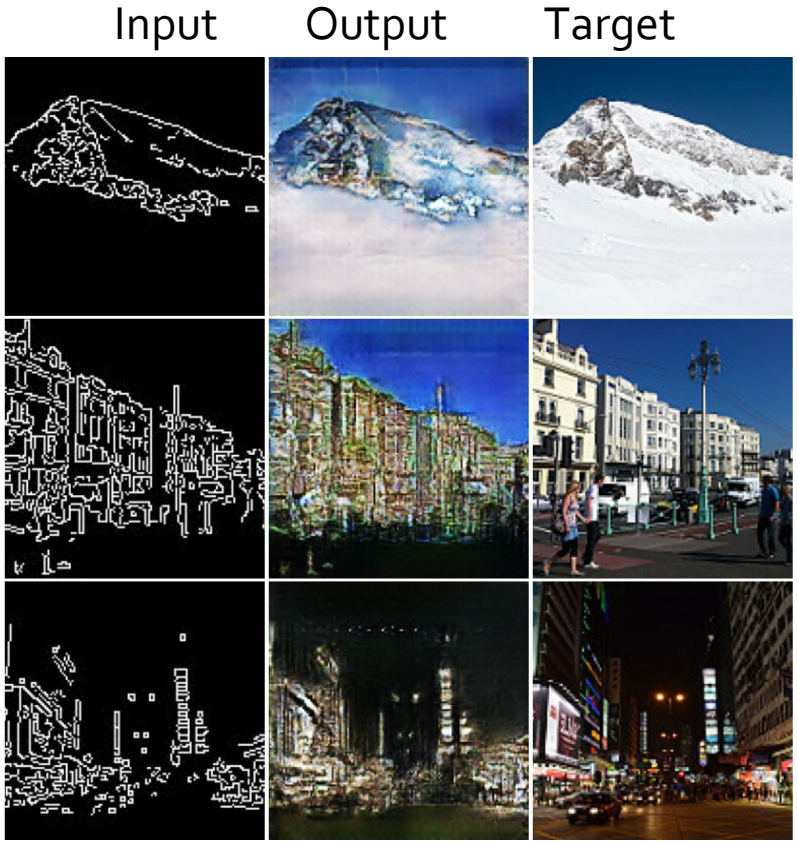



Canny Edge Detection

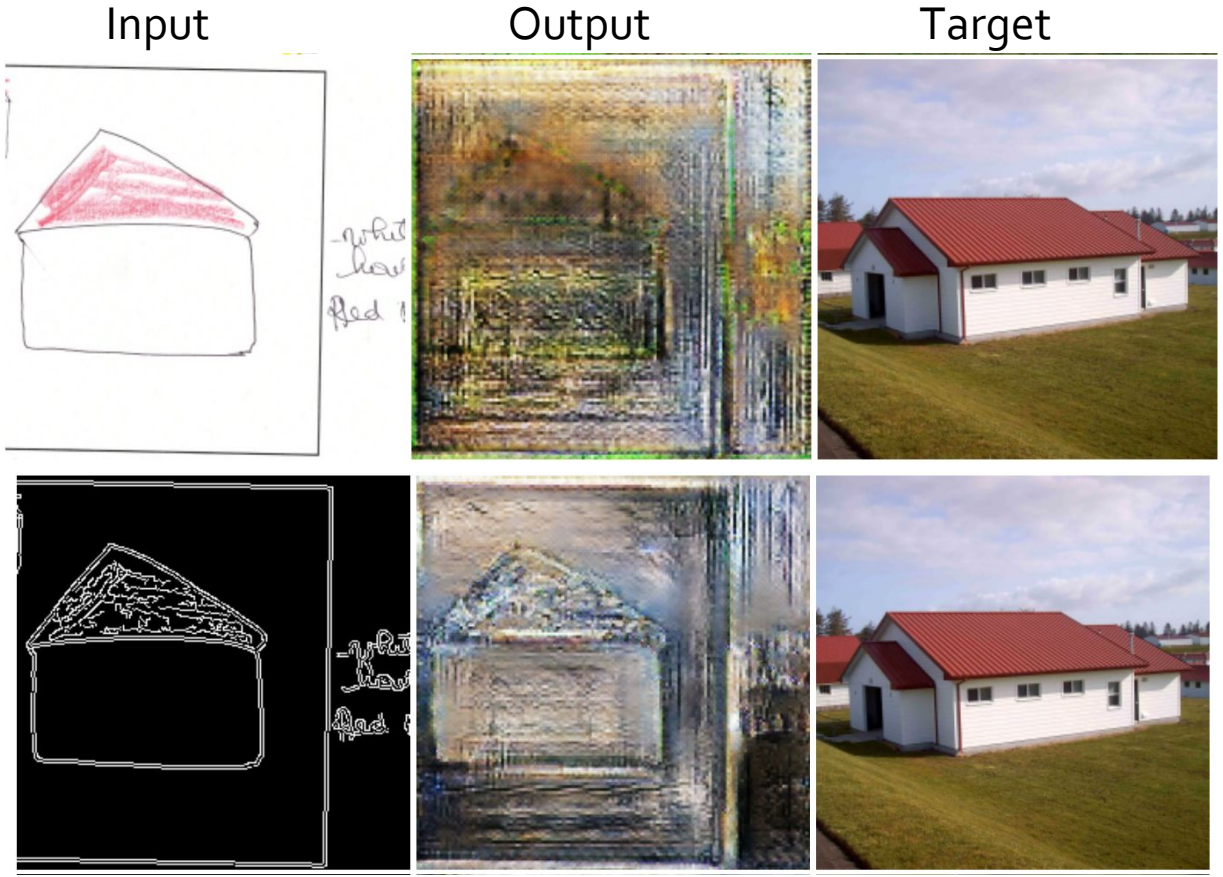




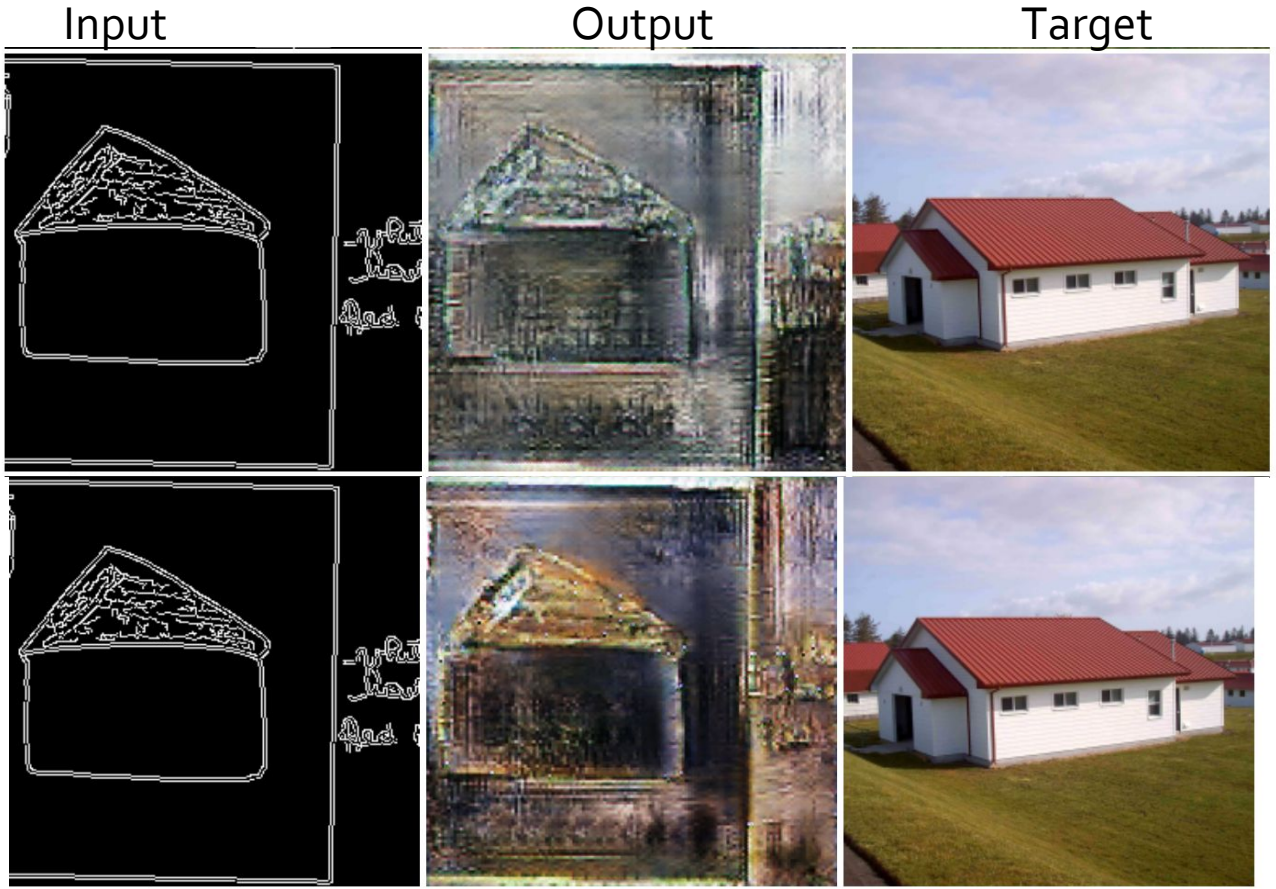
Training Output



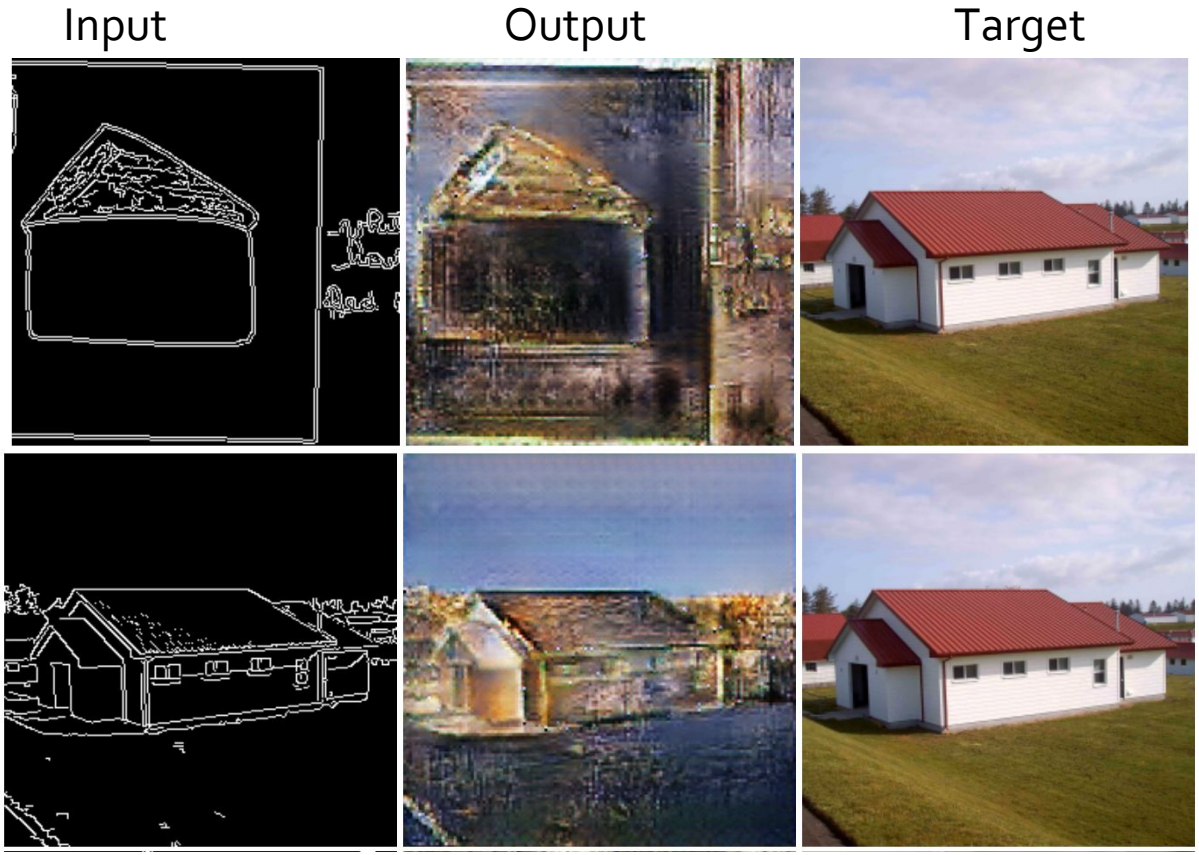
epoch 49



epoch 78 & epoch 112

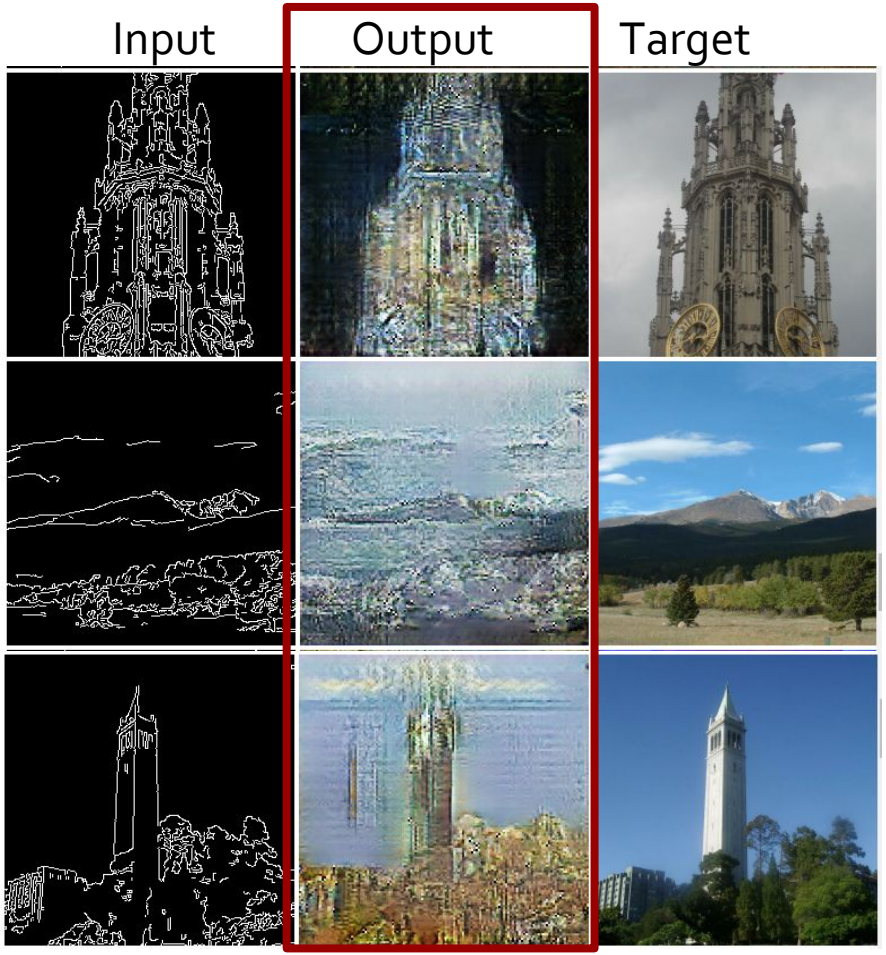


epoch 112

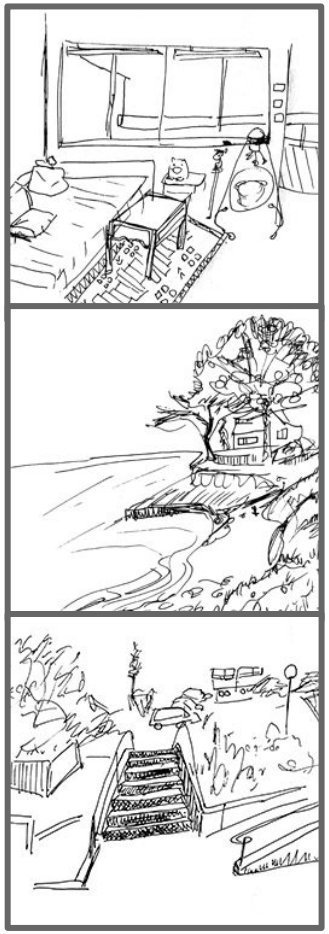


What’s next?

epoch 150



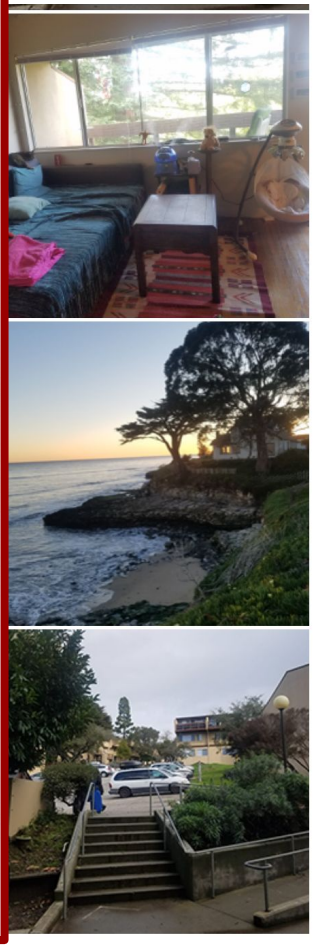
Drawing



Input

Output

Target



Thank you!