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CMPS240 Project Proposal

Project Idea:
The main idea for this project is to train a GAN to map edges to photos. This idea has been researched in the past, most notably in the paper "Image-to-Image Translation with Conditional Adversarial Networks" from UC Berkeley. We propose an improvement to the model by using Googles BigGAN, proposed in "Large Scale GAN Training for High Fidelity Natural Image Synthesis." This should in theory reproduce an edge to photo mapping of higher resolutions by applying orthogonal regularization to the generator. Furthermore, the edges will be produced by an edge detector, we will have to test various different ones to find the one that suits our needs the best. While this technique can be applied to any photo dataset, we plan on applying this to Stanfords car dataset.

Team members:
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Dataset:
The dataset we will be using is Stanford's car dataset.
This can be found on Kaggle: https://www.kaggle.com/jessicali9530/stanford-cars-dataset

However, since our goal is to create an edge to photo mapping, we will have to generate the edges for the above dataset.

Input/Output:
The input will be any binary edge image and the output should be a photo of a car. As shown below.
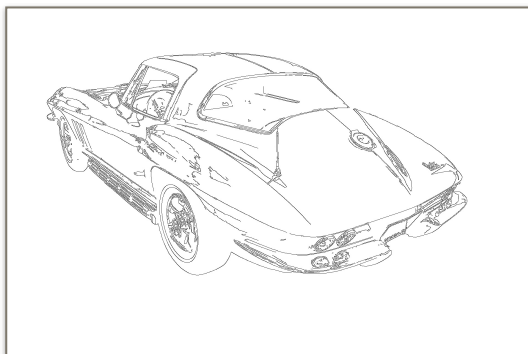
Evaluation:
We will evaluate the model visually, if the images generated are any good. As well as measure the model's Inception Score.