Assignment 5 - Generative Image Models
Applied Machine Learning Engineering

1   Your Challenge

Starting with a natural image that you select of a bird eating at a birdfeeder, your task is to develop python code that will perfom the following

1. use a pre-trained deep image segmentation model to segment the component of the image containing the bird,

2. produce a convincing modification of the image using an inpainting model to fill in the part of the image previously containing the bird to make it appear that is was never there, and

3. produce a second modified image using an inpainting model in which where the bird previously was, a different more colorful type of bird has been filled in.

You will submit your code to do this, along with the three images. The assignment can be completed in Google Cloud Platform.

2   What to submit

Please submit a compressed archive username-lab5.tgz or username-lab5.zip containing the following files.

- origImage.jpg the original image of a bird at a birdfeeder you started with.
- maskImage.png the mask of the bird identified with your code.
- birdRemoved.png the modified version of the original image produced by your code with the bird removed and background inpainted in its place.
- birdReplaced.png the modified version of the original image produced by your code with the bird removed and a different more colorful bird inpainted in its place.
- segmentImage.py your python code that creates the mask from the original image.
- removeBird.py the python code that takes the mask and original image and produces the image with the bird removed.
- replaceBird.py the python code that takes the mask and original image and produces the image with the bird replaced.