Bird Image Generation With Deep Convolutional Generative Adversarial Network
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Problem Description
The goal of the project is to learn how to generate images of birds, through unsupervised Deep Convolutional Generative Adversarial Network (DCGAN).

Data & Preprocessing
Caltech-UCSD Birds 200 (CUB-200), which includes 11776 images of birds. There are in total more than 200 types of birds.
Preprocessing:
- Crop out only the bounding box.
- Resize to 64*64.

Deep Convolutional Generative Adversarial Network

Sample Generated Images

Incrementing Z Vectors

Averaging Z Vectors

Future Steps
- Increase the size of training images by 2 or 3 times. 11776 images are not enough, considering the diversity of birds, for example, their physical shapes, the background, and their pose (whether flying, floating or standing).
- Use center cropping instead of resizing to avoid distorting birds and make them look fat.
- Use pre-trained bird detector model to classify 1000 generated images and see what is the percentage of generated images being classified as birds. So that I have a quantifiable metric for evaluation.

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