Assignment 3 Writeup

DO NOT TAG

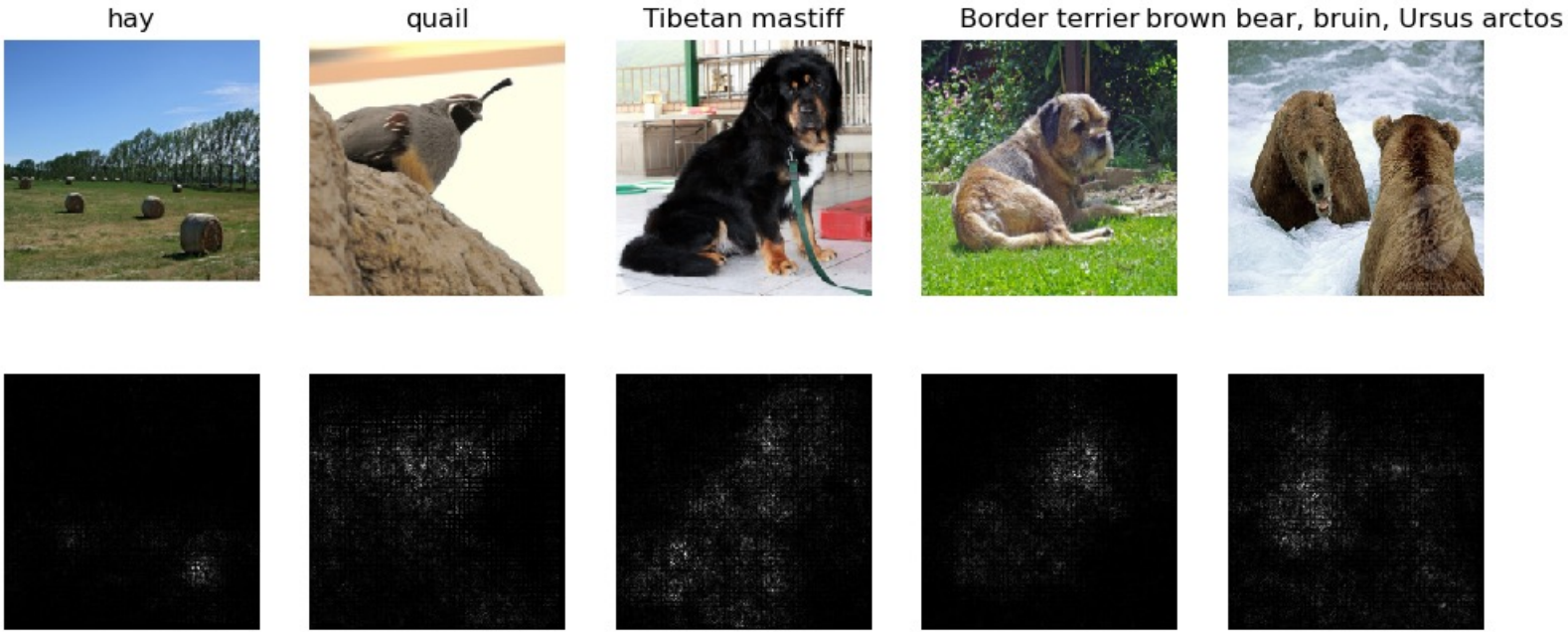
Name: Bing Yang
GT Email: byang322@gatech.edu

Visualization

DO NOT TAG

Saliency Map

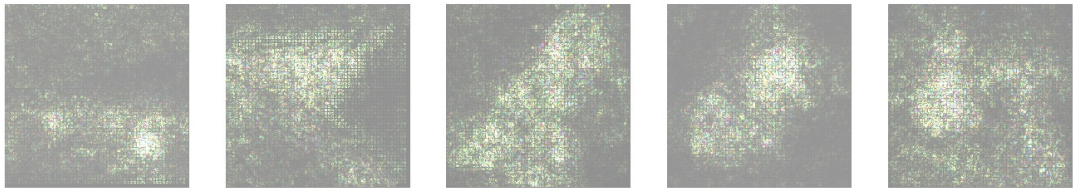
- Include your saliency map here


hay
quail
Tibetan mastiff
Border terrier
brown bear, bruin, Ursus arctos

Saliency Map

- Include your saliency map from Captum here

Original Image



Saliency Map Captum

GradCam

- Include your visualization of Guided Backprop here


hay
quail
Tibetan mastiff
Border terrier
brown bear, bruin, Ursus arctos

GradCam

- Include your visualization of GradCam here


hay
quail
Tibetan mastiff
Border terrier
brown bear, bruin, Ursus arctos

GradCam

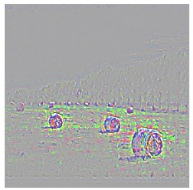
- Include your visualization of Guided GradCam here

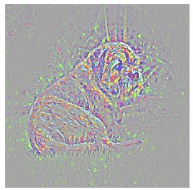

hay
quail
Tibetan mastiff
Border terrier
brown bear, bruin, Ursus arctos

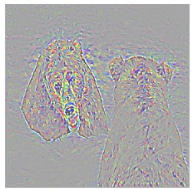
GradCam

- Include your visualization of Guided Backprop and Guided Gradcam from Captum here

Original Image

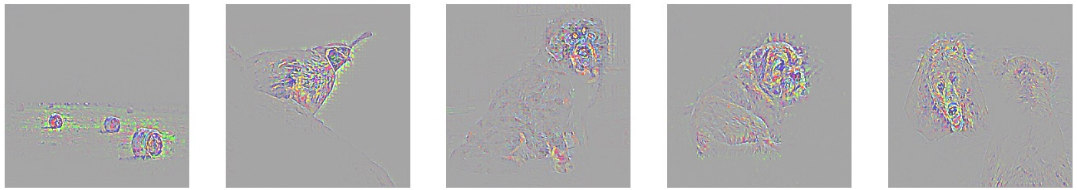






Guided Backpropagation

Original Image



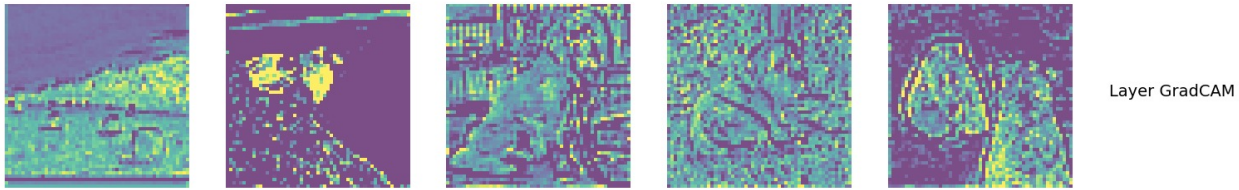
Guided GradCAM

GradCam

- Visualization of layers and neurons using Captum here:


hay
quail
Tibetan mastiff
Border terrier
brown bear, bruin, Ursus arctos
Original Image
Layer Conductance


hay
quail
Tibetan mastiff
Border terrier
brown bear, bruin, Ursus arctos
Original Image


Layer GradCAM

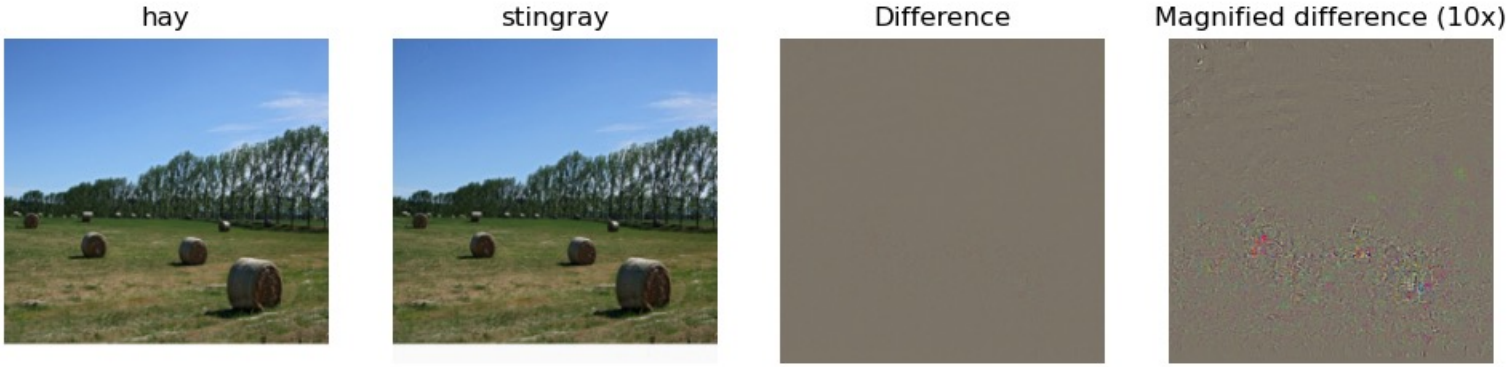
What do saliency map and Gradcam tell you

- Answer:

In short answer, both saliency map and gradcam can give the information on what regions in the input images are important for the final classification problem given the correct class label.
Saliency map could be understood as a mask showing where in the image the objects used for classification are.
Gradcam shows what regions are mostly captured in the final convolutional layer (or previous layers).

Fooling Image

- Include the fooling image here


hay
stingray
Difference
Magnified difference (10x)

Fooling Image

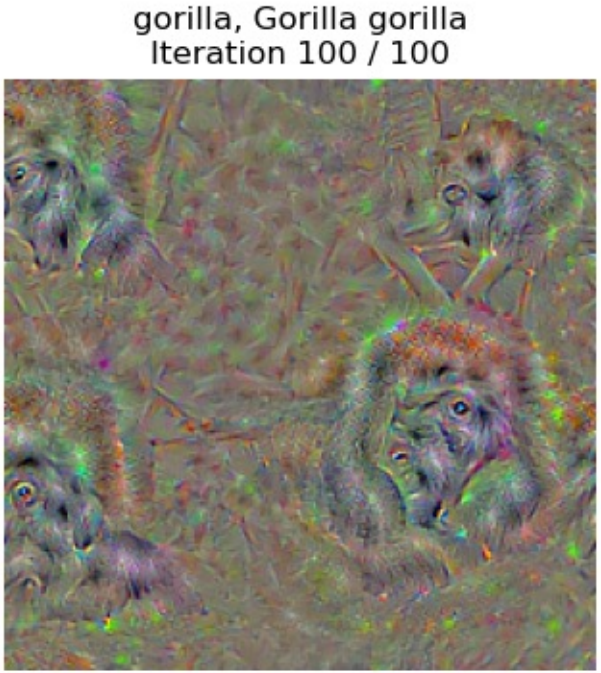
What insights do you get from fooling images:

- Answer:

- The difference between raw image and fooling image is not noticeable to human eyes. This suggests for this model it is sensitive to adversarial attack. We need to use those fooling images during training to increase the performance of the deep learning model.

Class Visualization

- Include class visualization of Gorilla here



Style Transfer

DO NOT TAG

Composition VII + Tubingen

- Include both original images and the transferred image

Content Source Img.

Style Source Img.

Scream + Tubingen

- Include both original images and the transferred image

Content Source Img.

Style Source Img.

Starry Night + Tubingen

- Include both original images and the transferred image

Content Source Img.

Style Source Img.