Collaborators:

ML Theory textbook

Assignment 3

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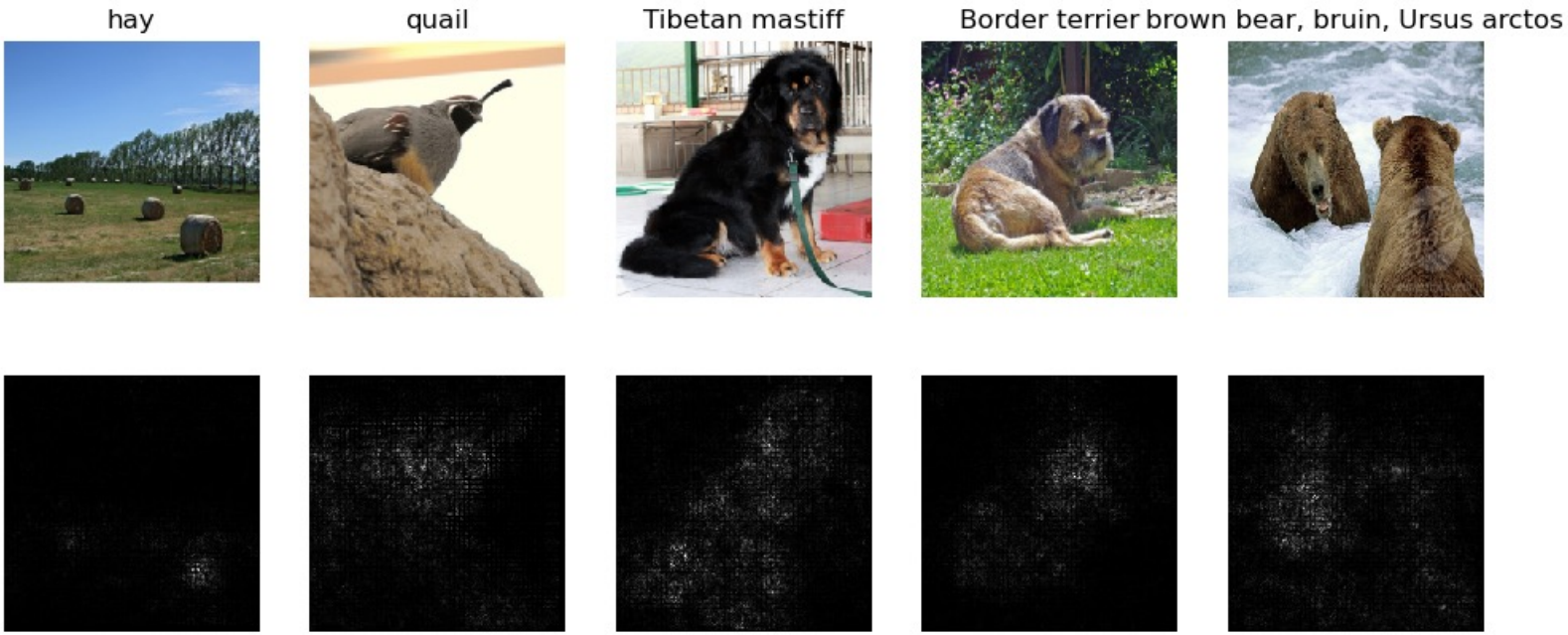
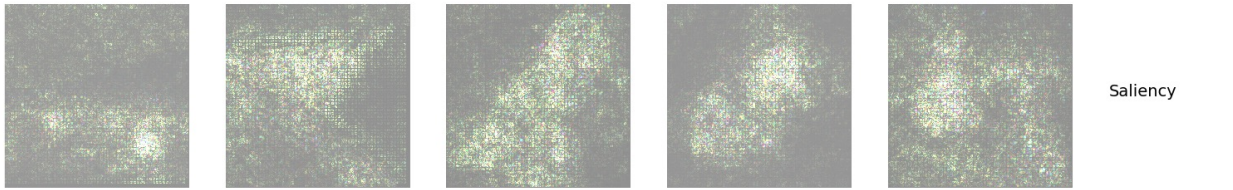
Your GTID: byang301

Visualization

Saliency Map (1 point)



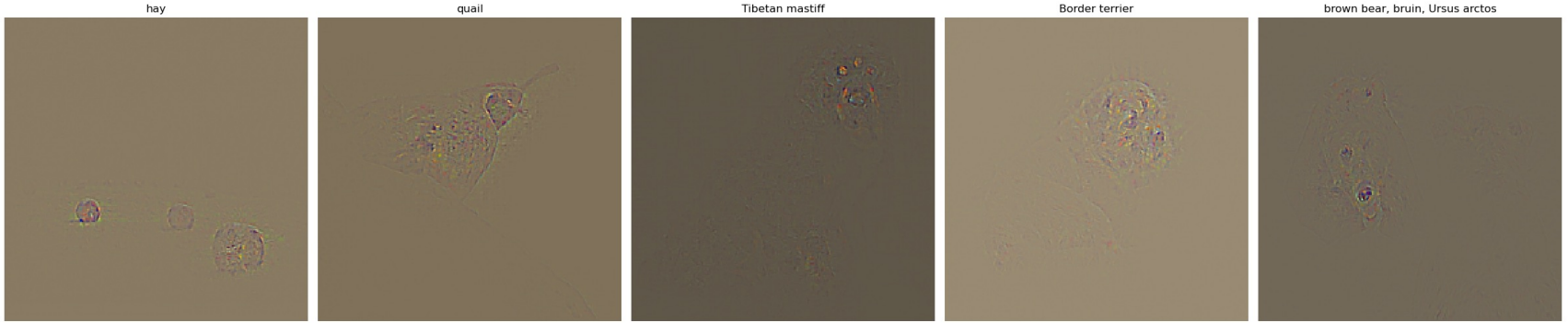
Saliency Map Captum (1 point)



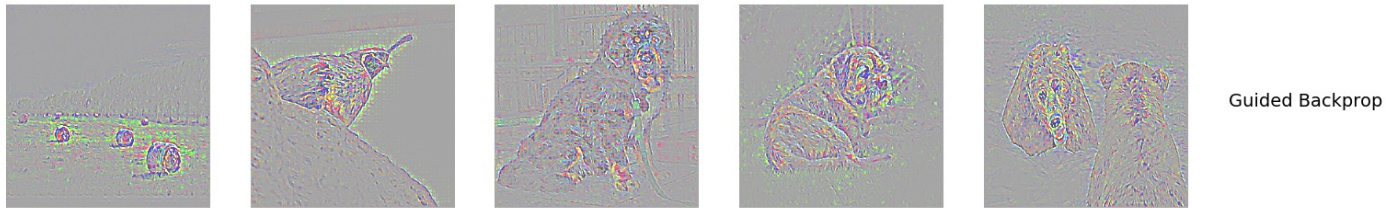
Guided Backprop (1 point)

GradCam (1 point)

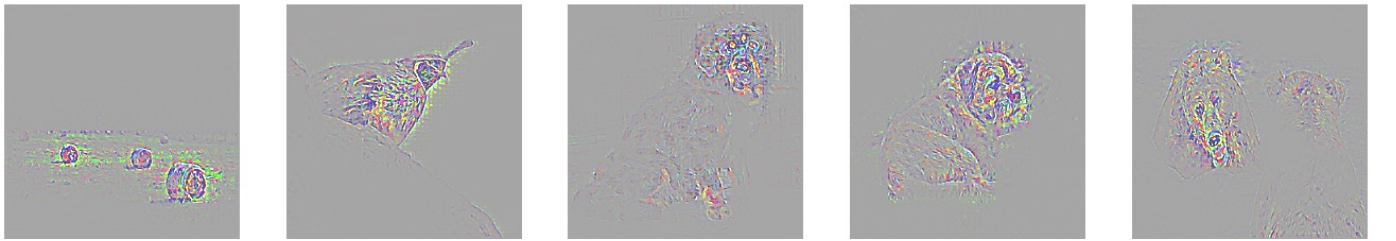
Guided GradCam (1 point)



Guided Backprop + GradCam (Captum) (1 point)

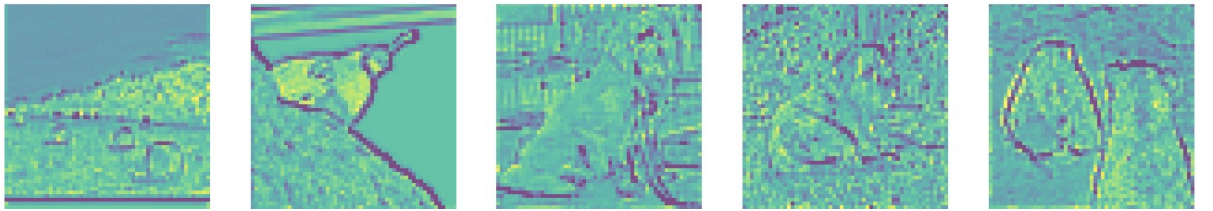



hay
quail
Tibetan mastiff
Border terrier
brown bear, bruin, Ursus arctos
Original Image


Guided GradCam

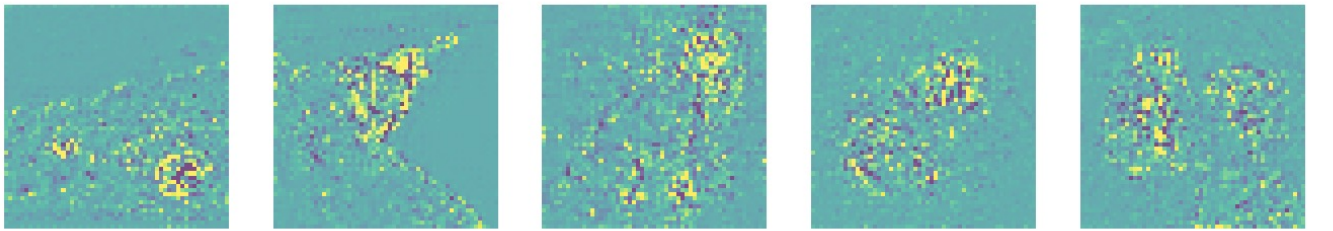
Layers and neurons using Captum (1 point)

Original Image



Layer GradCam

Original Image

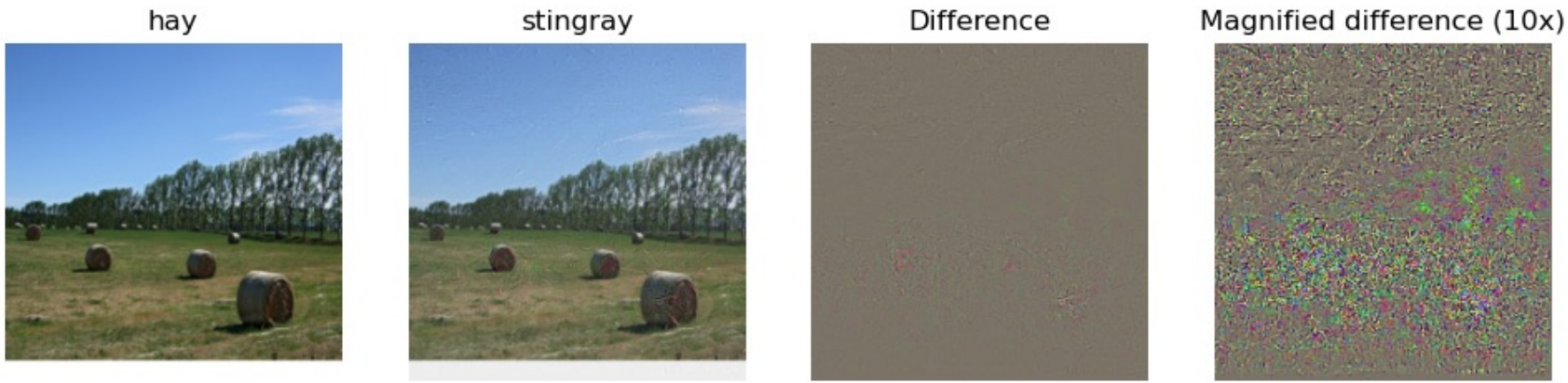


Layer Conductance

What do saliency map and Gradcam tell you? (1 point)

- Saliency map tells use the degree to which each pixel in the image affects the classification score of that image. Brighter pixels correspond to higher effect on the classification.
- Gradcam tells use where the network is looking when it is classifying an input image. It highlights the important regions within the input image for classification.

Fooling Image (1 point)



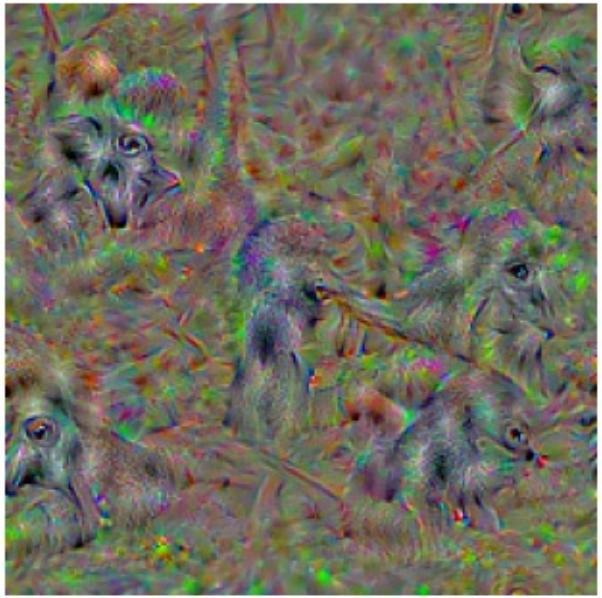
Fooling Image Insights (1 point)

What insights do you get from fooling images:

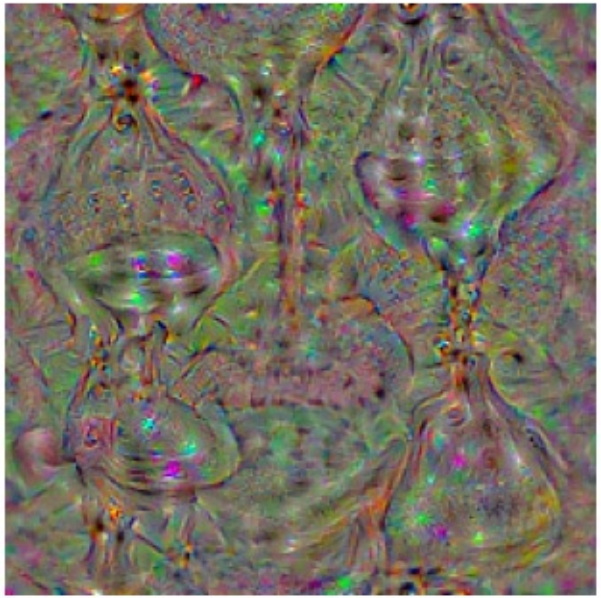
- Even though the fooling image would fool the network into classifying it as a stingray, it still looks the same as hay to the human. This tells us that networks can be easily tricked since it only takes very small differences in the pixels to confuse a nn.

Class Visualization (3 points)

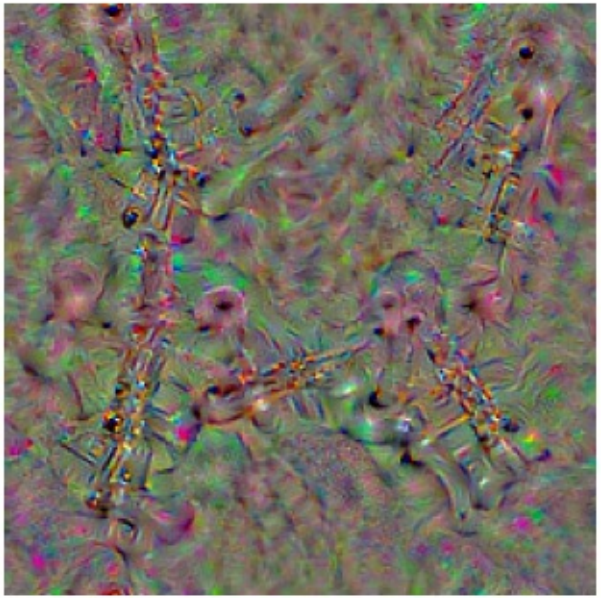
gorilla, Gorilla gorilla
Iteration 100 / 100



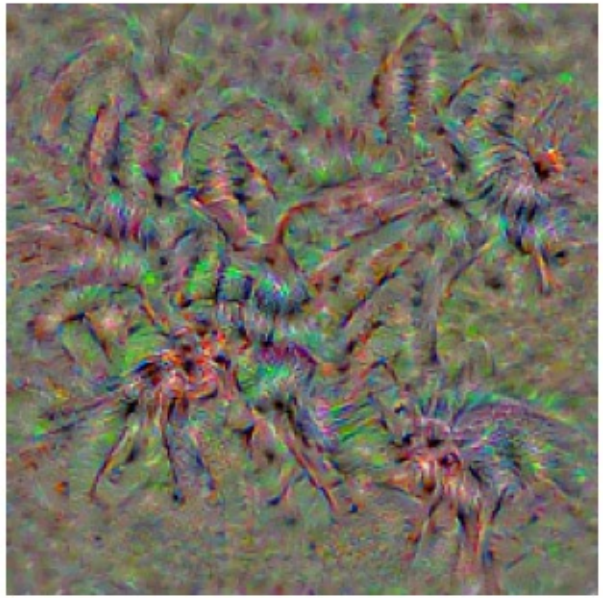
hourglass
Iteration 100 / 100



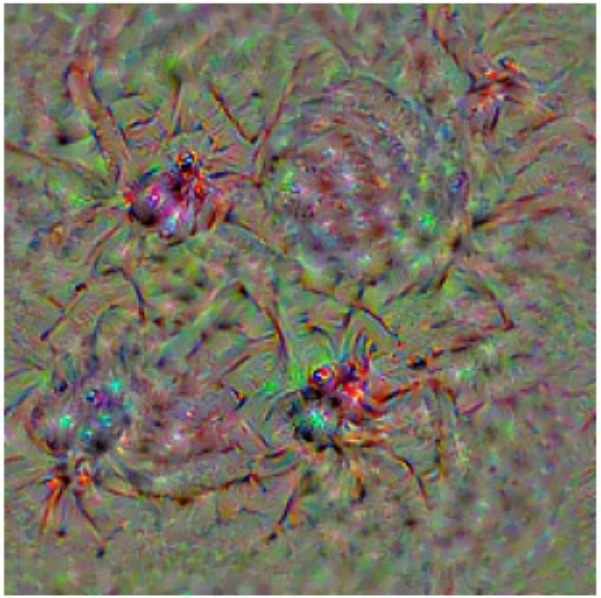
oboe, hautboy, hautbois
Iteration 100 / 100



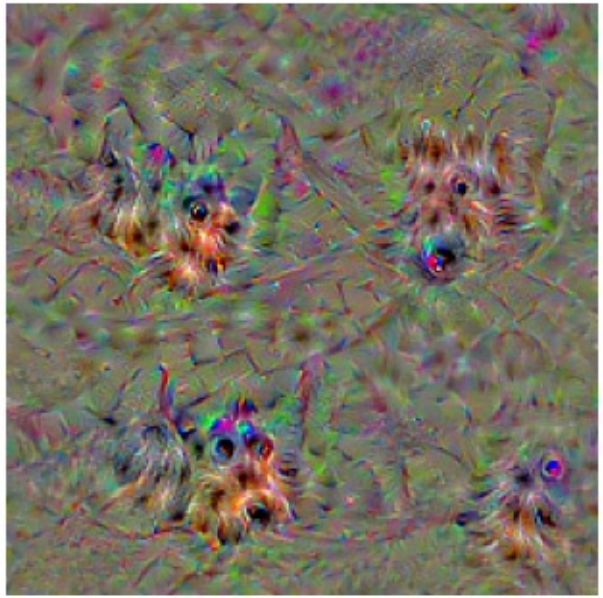
tarantula
Iteration 100 / 100



tick
Iteration 100 / 100



Yorkshire terrier
Iteration 100 / 100



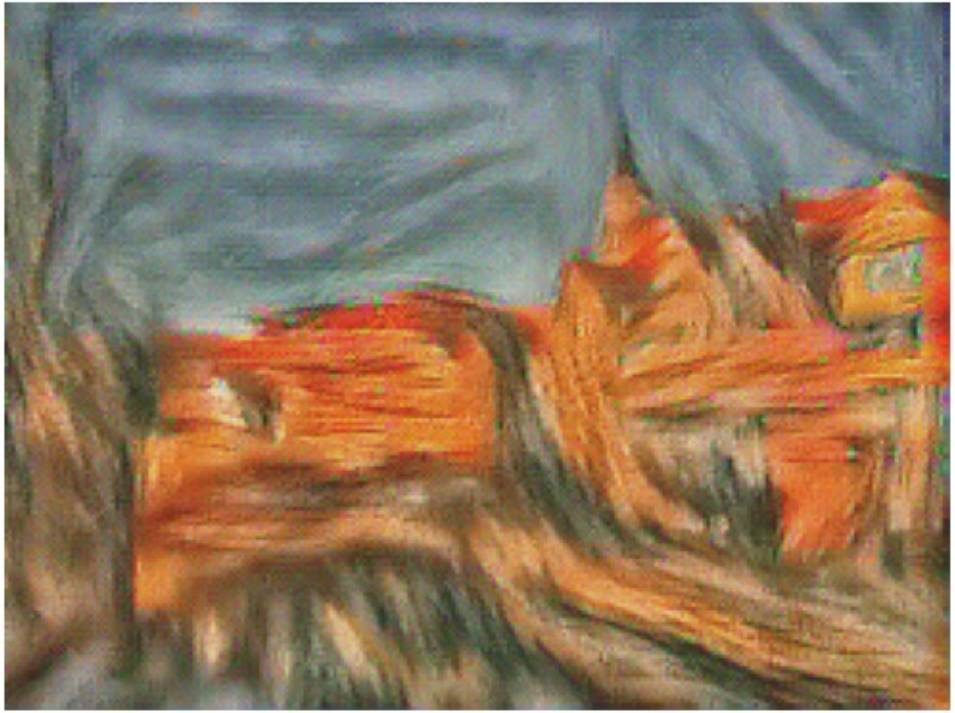
Style Transfer

Composition VII + Tubingen (1 point)

Content Source Img.

Style Source Img.

Scream + Tubingen (1 point)



Content Source Img.

Style Source Img.

Starry Night + Tubingen (1 point)

Content Source Img.

Style Source Img.

- Be sure to append the jupyter notebook i.e. $root/test_style_transfer.ipynb for testing sections of the style transfer implementation to this report.