Readme

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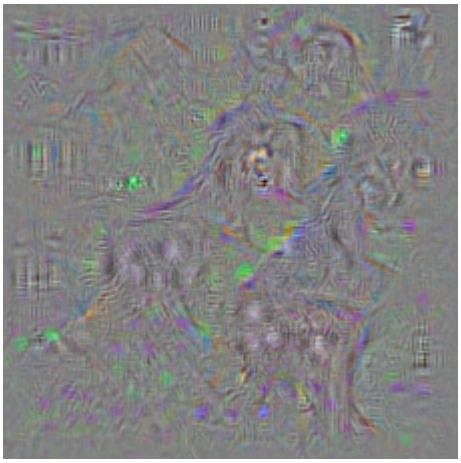
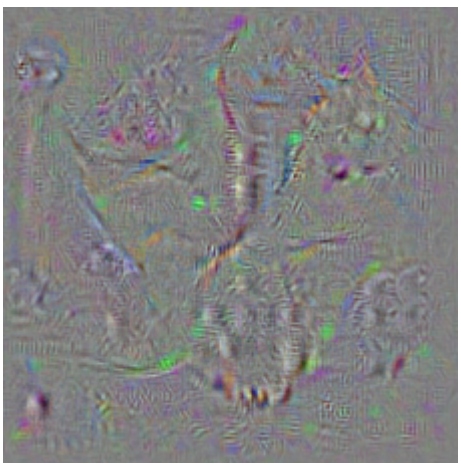
A. Visualization of neurons via input optimization

The code is in ***Ass_A.py***, which is changed by the original code named 'myalexnet_forward_newtf.py'. And there are some outputs generated by this experiment with different learning accuracy and gradient update function, all of them are in the file named '***A_gen***'. Here are two example result:

The dog:



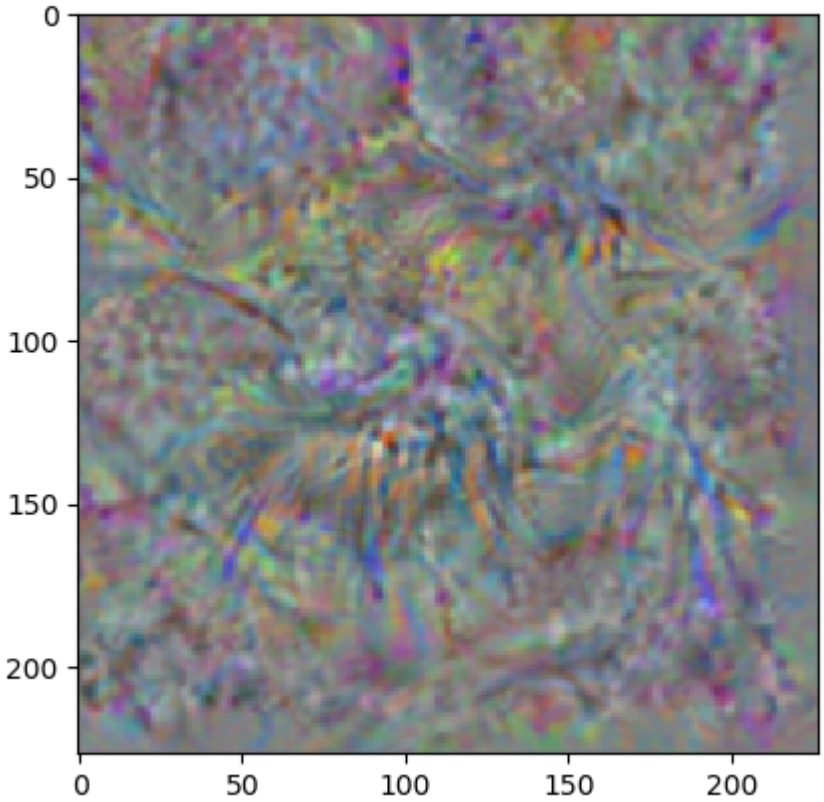
The laska:



B. Natural image statistics

The code is in **Ass_B.py**, and I use the 122th class(*king crab, Alaska crab, Alaskan king crab, Alaska king crab, Paralithodes camtschatica*) for this section. Due to time constraints, I only ran 1200 steps. So it can not do well enough(I am sorry).

The final result has been shown follow.



C. Fooling a network

The code is in ***Ass_C.py***, and the example output files are '***C_poodle***', '***C_laska***'. In each file, every image named by '*number_class-names_probability*', '*number*' means the image generation order, '*class-name*' means which class this image be identified, '*probability*' means the probability that the picture is recognized as this class.

The original image named laska(size: 89.9KB, probability: 0.36799395):

The image after the net be fooled to identify the image as nematode(size:95.3KB, probability: 0.98177713):

The original image named poodle(size: 108KB, probability: 0.389395):

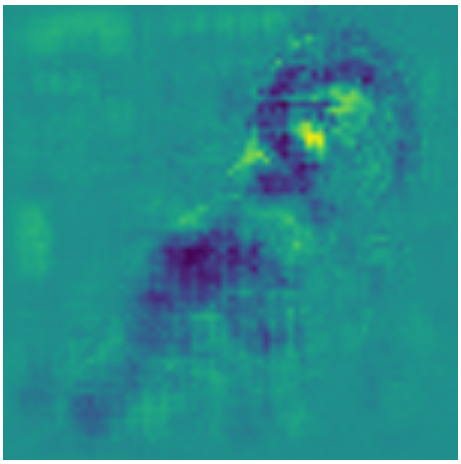
The image after the net be fooled to identify the image as brambling(size:109KB, probability: 0.98773056):

D. Classification importance map

The code is in '**Ass_D.py**', and the output importance maps are in files named '**D_dog**', '**D_poodle**', which shows importance maps in each iteration.

The final one has been shown follow.(After be resized to 227x227)

dog.png :



poodle.png: