PAGRN：input: h*w*3

Block1: input: h*w*3 output: h/2*w/2*64
cost: h*w*64*3*3*3 + h*w*64*3*3*64+h*w*64 = 38656 *h*w

Block2: input: h/2*w/2*64 output: h/4*w/4*128
cost: h/2*w/2*128*3*3*64 + h/2*w/2*128*3*3*128+h/2*w/2*128 = 55328*h*w

Block3: input: h/4*w/4*128 output: h/8*w/8*256
cost: h/4*w/4*256*3*3*128 + h/4*w/4*256*3*3*256*3 + h/4*w/4*256 = 129040*h*w

Block4: input: h/8*w/8*256 output: h/16*w/16*512
cost: h/8*w/8*512*3*3*256 + h/8*w/8*512*3*3*512*3 + h/8*w/8*512 = 129032*h*w

Block5: input: h/16*w/16*512 output: h/16*w/16*512
cost: h/16*w/16*512*3*3*512*5 = 46080*h*w

attention5:
h/16*w/16*512 + 1*1*512*512 + h/16*w/16*512 + h/16*w/16*512*512 + h/16*w/16*512 + h/8*w/8*512 + h/8*w/8*256*1*1*512 = 265230*h*w

attention4:
h/8*w/8*256 + 1*1*256*256 + h/8*w/8*256 + h/8*w/8*256*256 + h/8*w/8*256 + h/4*w/4*256 + h/4*w/4*256*256 = 70684*h*w

attention3:
h/4*w/4*256 + 1*1*256*256 + h/4*w/4*256 + h/4*w/4*256*256 + h/4*w/4*256 = 69680*h*w

saliency_map:
h/4*w/4*1*1*256 = 16*h*w

totally:
38656 *h*w + 55328*h*w + 129040*h*w + 129032*h*w + 46080*h*w + 265230*h*w + 70684*h*w + 69680*h*w + 16*h*w = 803746 * h*w

参数量：
Block1: 3*3*3*64 + 3*3*64*64 = 38592
Block2: 3*3*64*128 + 3*3*128*128 = 221184
Block3: 3*3*128*256 + 3*3*256*256 + 3*3*256*256 + 3*3*256*256 = 2064384
Block4: 3*3*256*512 + 3*3*512*512 + 3*3*512*512 + 3*3*512*512 = 8257536
Block5: 3*3*512*512 * 5 = 11796480
attention5: 512*512*2 + 512*256 = 655360
attention4: 256*256*3 = 65536
attention3: 256*256*3 = 65536
saliency_map = 256

totally: 38592 + 221184 + 2064384 + 8257536 + 11796480 + 655360 + 65536 + 65536 + 256 = 23164864

NLDF: input: 354*354

Conv1: input: h*w*3 output: h/2*w/2*64
cost: h*w*64*3*3*3 + h*w*64*3*3*64 + h*w*64 = 38656*h*w

Conv2: input: h/2*w/2*64 output: h/4*w/4*128
cost: h/2*w/2*128*3*3*64 + h/2*w/2*128*3*3*128 + h/2*w/2*128 = 55328*h*w

Conv3: input: h/4*w/4*128 output: h/8*w/8*256
cost: h/4*w/4*256*3*3*128 + h/4*w/4*256*3*3*256*2 + h/4*w/4*256 = 92176*h*w

conv4: input: h/8*w/8*256 output: h/16*2/16*512
cost: h/8*w/8*512*3*3*256 + h/8*w/8*512*3*3*512*2 + h/8*w/8*512 = 92168*h*w

Conv5: input: h/16*w/16*512 output: h/32*w/32*512
cost: h/16*w/16*512*3*3*512*3 + h/16*w/16*512 = 27650*h*w

Conv6: input: h/2*w/2*64 output: h/2*w/2*128
cost: h/2*w/2*128*3*3*64 = 18432*h*w

Conv7: input: h/4*w/4*128 output: h/4*w/4*128
cost: h/4*w/4*128*3*3*128 = 9216*h*w

Conv8: input: h/8*w/8*256 output: h/8*w/8*128
cost: h/8*w/8*128*3*3*256 = 4608*h*w

Conv9: input: h/16*2/16*512 output: h/16*w/16*128
Cost: h/16*w/16*128*3*3*512 = 2304*h*w

Conv10: input: h/32*w/32*512 output: h/32*w/32*128
cost: h/32*w/32*128*3*3*512 = 576*h*w

contrast1:
h/2*w/2*128 + h/2*w/2*128*3*3 = 320*h*w

contrast2:
h/4*w/4*128 + h/4*w/4*128*3*3 = 80*h*w

Contrast3:
h/8*w/8*128 + h/8*w/8*128*3*3 = 20*h*w

Contrast4:
h/16*w/16*128*(1+3*3) = 5*h*w

Contrast5:
h/32*w/32*128*(1+3*3) = 1.25*h*w

unpooling5: input: h/32*w/32*(128+128) output: h/16*2/16*128
cost: h/16*w/16*128*5*5*256 = 3200*h*w

Unpooling4: input: h/16*w/16*(128*2+128) output: h/8*w/8*256
cost: h/8*w/8*256*5*5*128*3 = 38400*h*w

Unpooling3: input: h/8*w/8*(128*2+256) output: h/4*w/4*384
cost: h/4*w/4*384*5*5*128*4 = 307200*h*w

Unpooling2: input h/4*w/4*(128*2+384) output: h/2*w/2*512
cost: h/2*w/2*512*5*5*128*5 = 2048000*h*w

Local: input: h/2*w/2*(128*2+512) output: h/2*w/2*640
Cost: h/2*w/2*640*(128*2+512) = 122880*h*w

Local score: h/2*w/2*640 output: h/2*w/2*2
cost: h/2*w/2*2*640 = 320*h*w

Global: input: h/32*w/32*512 (11*11*512) output: 1*1*128
11*11*512 -> 7*7*128 -> 3*3*128 -> 1*1*128
h/32*w/32*512 -> (h/32-4)*(w/32-4)*128 -> (h/32-8)*(w/32-8)*128 -> (h/32-10)*(w/32-10)*128
Cost: 7*7*128*5*5*512 + 3*3*128*5*5*128 + 1*1*128*3*3*128 = 84115456 (without h*w)
Cost: (h/32-4)*(w/32-4)*128*5*5*512 + (h/32-8)*(w/32-8)*128*5*5*128 + (h/32-10)*(w/32-10)*128*3*3*128 = 2144*h*w - 204800*(h+w) + 26214400 - 102400*(h+w) + 26214400 - 46080*(h+w) + 14745600 = 2144*h*w - 353280*(h+w) + 67174400 (with h*w)

Global score: input: 1*1*128 output: 1*1*2
cost: 1*1*2*1*128 = 256

add_score:
h/2*w/2*2 = 0.5*h*w

totally:
38656*h*w + 55328*h*w + 92176*h*w + 92168*h*w + 27650*h*w + 18432*h*w + 9216*h*w + 4608*h*w + 2304*h*w + 576*h*w + 320*h*w + 80*h*w + 20*h*w + 5*h*w + 1.25*h*w + 3200*h*w + 38400*h*w + 307200*h*w + 2048000*h*w + 122880*h*w + 320*h*w + 84115456 + 256 + 0.5*h*w = 2861540.75*h*w + 84115712(without h*w)

2861540.75*h*w + 256 + 2144*h*w - 353280*(h+w) + 67174400 = 2863684.75 - 353280*(h+w) + 67174656 (with h*w)

参数量:
conv1: 3*3*3*64 + 3*3*64*64 = 38592
conv2: 3*3*64*128 + 3*3*128*128 = 221184
conv3: 3*3*128*256 + 3*3*256*256 + 3*3*256*256 = 1474560
conv4: 3*3*256*512 + 3*3*512*512 + 3*3*512*512 = 5898240
conv5: 3*3*512*512 + 3*3*512*512 + 3*3*512*512 = 7077888
conv6: 3*3*64*128 = 73728
conv7: 3*3*128*128 = 147456
conv8: 3*3*256*128 = 294912
conv9: 3*3*512*128 = 589824
conv10: 3*3*512*128 = 589824
unpooling5: 5*5*256*128 = 819200
unpooling4: 5*5*384*256 = 2457600
unpooling3: 5*5*512*384 = 4915200
unpooling2: 5*5*640*512 = 8192000
local: 768*640 = 491520
local_score: 640*2 = 1280
global: 5*5*512*128 + 5*5*128*128 + 3*3*128*128 = 2195456
global_score = 128*2 = 256

totally:
38592 + 221184 + 1474560 + 5898240 + 7077888 + 73728 + 147456 + 294912 + 589824 + 589824 + 819200 + 2457600 + 4915200 + 8192000 + 491520 + 1280 + 2195456 + 256 = 35478720

DSS:
conv_1:
h*w*64*3*3*3 + h*w*64*3*3*64 + h*w*64 = 38656*h*w

conv_2:
h/2*w/2*128*3*3*64 + h/2*w/2*128*3*3*128 + h/2*w/2*128 = 55328*h*w

conv_3:
h/4*w/4*256*3*3*128 + h/4*w/4*256*3*3*256*2 + h/4*w/4*256 = 92176*h*w

conv_4:
h/8*w/8*512*3*3*256 + h/8*w/8*512*3*3*512*2 + h/8*w/8*512 = 92168*h*w

conv_5:
h/16*w/16*512*3*3*512*3 + h/16*w16*512 = 27650*h*w

Conv1_2:
h*w*128*3*3*64 + h*w*128*3*3*128 + h*w*1*1*128 = 221312*h*w

conv2_2:
h/2*w/2*128*3*3*128 + h/2*w/2*128*3*3*128 + h/2*w/2*1*1*128 = 73760*h*w

Conv3_3:
h/4*w/4*256*5*5*256 + h/4*w/4*256*5*5*256 + h/4*w/4*1*256 = 204816*h*w

conv4_3:
h/8*w/8*256*5*5*512 + h/8*w/8*256*5*5*256 + h/8*w/8*1*256 = 76804*h*w

conv5_3:
h/16*w/16*512*5*5*512 + h/16*w/16*512*5*5*512 + h/16*w/16*1*512 = 51202*h*w

pool5:
h/32*w/32*512*7*7*512 + h/32*w/32*512*7*7*512 + h/32*w/32*1*512 = 25088*h*w

Short connection:
conv4_3: h/8*w/8*3
conv3_3: h/4*w/4*3
conv2_2: h/2*w/2*5
conv1_2: h*w*5

Totally:
38656 + 55328 + 92176 + 92168 + 27650 + 221312 + 73760 + 204816 + 76804 + 51202 + 25088 + 6.484375 = 984054.484375*h*w

参数量:
conv1: 3*3*3*64 + 3*3*64*64 = 38592
conv2: 3*3*64*128 + 3*3*128*128 = 221184
conv3: 3*3*128*256 + 3*3*256*256 + 3*3*256*256 = 1474560
conv4: 3*3*256*512 + 3*3*512*512 + 3*3*512*512 = 5898240
conv5: 3*3*512*512 + 3*3*512*512 + 3*3*512*512 = 7077888
conv1_2: 3*3*64*128 + 3*3*128*128 + 1*1*128*1 = 221312
conv2_2: 3*3*128*128 + 3*3*128*128 + 1*1*128*1 = 295040
conv3_3: 5*5*256*256 + 5*5*256*256 + 1*1*256*1 = 3277056
conv4_3: 5*5*512*256 + 5*5*256*256 + 1*1*256*1 = 4915456
conv5_3: 5*5*512*512 + 5*5*512*512 + 1*1*512*1 = 13107712
pool5: 7*7*512*512 + 7*7*512*512 + 1*1*512*1 = 25690624

short connection:
conv4_3: 1*1*3*1 = 3
conv3_3: 1*1*3*1 = 3
conv2_2: 1*1*5*1 = 5
conv1_2: 1*1*5*1 = 5

totally:
38592 + 221184 + 1474560 + 5898240 + 7077888 + 221312 + 295040 + 3277056 + 4915456 + 13107712 + 25690624 + 3 + 3 + 5 + 5 = 62217680