
Dynamic Resolution Network (Supplementary Material)

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1 Details of predictor architectures

We utilize the basic block of resnet to construct the predictor, i.e., 4 basic blocks are stacked to form the predictor network in our paper. Here we build 4 predictor architectures with fewer parameters and FLOPs and we compare their performances as follows. We can see that the predictor with fewer flops leads to slight accuracy degradation.

(1) Predictor-Architecture-1: The original predictor in our paper. The parameters of the first convolution are Conv2d (3, 64, kernel_size=(7, 7), stride=(2, 2), padding=(3, 3), bias=False).

(2) Predictor-Architecture-2: We reduce the blocks of the predictor in (1) to construct a new predictor. We retain only 2 blocks.

(3) Predictor-Architecture-3: We increase the stride of the first convolution in (2) to 4. Thus, the parameters of the first convolution are Conv2d (3, 64, kernel_size=(7, 7), stride=(4, 4), padding=(3, 3), bias=False).

(4) Predictor-Architecture-4: We construct the predictor with only two convolutions.

Predictor	Predictor FLOPs	Total FLOPs	Acc
(1)	0.29G	3.35G	82.5%
(2)	0.17G	3.23G	82.0%
(3)	0.04G	3.10G	82.0%
(4)	0.09G	3.15G	81.4%

Table 1: comparison of different Predictors.

The details of these predictors are shown as follows:

(1) Predictor-Architecture-1

```
1 ResNet(  
2   (conv1)  
3   (bn1)
```

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```

5 (relu)
6 (maxpool)
7 (layer1): Sequential(
8   (0): BasicBlock(
9     (conv1)
10    (bn1)
11    (relu)
12    (conv2)
13    (bn2)
14   )
15 (layer2): Sequential(
16   (0): BasicBlock(
17     (conv1)
18     (bn1)
19     (relu)
20     (conv2)
21     (bn2)
22   (downsample): Sequential(
23     (0): Conv2d()
24     (1): BatchNorm2d()
25   )
26   )
27 (layer3): Sequential(
28   (0): BasicBlock(
29     (conv1)
30     (bn1)
31     (relu)
32     (conv2)
33     (bn2)
34   (downsample): Sequential(
35     (0): Conv2d()
36     (1): BatchNorm2d()
37   )
38   )
39 (layer4): Sequential(
40   (0): BasicBlock(
41     (conv1)
42     (bn1)
43     (relu)
44     (conv2)
45     (bn2)
46   (downsample): Sequential(
47     (0): Conv2d()
48     (1): BatchNorm2d()
49   )
50   )
51 (avgpool): AdaptiveAvgPool2d()
52 (dropout): Dropout()
53 (fc): Linear()
54 )

```

(2) Predictor-Architecture-2

```

1 ResNet(
2   (conv1)
3   (bn1)
4   (relu)
5   (maxpool)
6   (layer1): Sequential(

```

```

7 (0): BasicBlock(
  (conv1)
9 (bn1)
  (relu)
11 (conv2)
  (bn2)
13 )
  )
15 (layer2): Sequential(
  (0): BasicBlock(
17 (conv1)
  (bn1)
19 (relu)
  (conv2)
21 (bn2)
  (downsample): Sequential(
23 (0): Conv2d()
  (1): BatchNorm2d()
25 )
  )
27 )
  (avgpool)
29 (dropout)
  (fc)
31 )

```

(3) Predictor-Architecture-3

```

1 ResNet(
  (conv1)
3 (bn1)
  (relu)
5 (maxpool)
  (layer1): Sequential(
7 (0): BasicBlock(
  (conv1)
9 (bn1)
  (relu)
11 (conv2)
  (bn2)
13 )
  )
15 (layer2): Sequential(
  (0): BasicBlock(
17 (conv1)
  (bn1)
19 (relu)
  (conv2)
21 (bn2)
  (downsample): Sequential(
23 (0): Conv2d()
  (1): BatchNorm2d()
25 )
  )
27 )
  (avgpool)
29 (dropout)
  (fc)
31 )

```

(4) Predictor-Architecture-4

```

1 ResNet (
  (conv1)
3  (bn1)
  (relu)
5  (maxpool)
  (conv2)
7  (bn2)
  (relu)
9  (avgpool)
  (dropout)
11 (fc)
  )

```

2 ImageNet-100 Categories.

2	n01494475	n02095314	n02108915	n02177972	n02787622	n02971356	n03482405	n03899768	n04204238	n04509417
4	n01644900	n02097047	n02111889	n02219486	n02791124	n03065424	n03496892	n03908714	n04235860	n04542943
6	n01768244	n02097298	n02113023	n02229544	n02793495	n03124043	n03527444	n03977966	n04251144	n04548280
8	n01770393	n02099712	n02113799	n02443114	n02814860	n03180011	n03544143	n03982430	n04258138	n04554684
10	n01775062	n02101556	n02113978	n02494079	n02815834	n03201208	n03584829	n04041544	n04265275	n04590129
12	n01797886	n02102177	n02115913	n02504013	n02825657	n03216828	n03598930	n04049303	n04270147	n07717410
14	n01847000	n02105412	n02124075	n02606052	n02835271	n03372029	n03617480	n04081281	n04275548	n07920052
16	n01910747	n02106550	n02128757	n02667093	n02837789	n03461385	n03637318	n04116512	n04417672	n09193705
18	n01978287	n02108000	n02129604	n02687172	n02965783	n03476684	n03710721	n04118538	n04458633	n10565667
	n02085782	n02108422	n02165105	n02699494	n02966687	n03476991	n03804744	n04120489	n04487081	n12144580