# 语义分割模型耗时标准测试方法@lalei

<https://github.com/CoinCheung/BiSeNet/issues/158>

<https://github.com/MichaelFan01/STDC-Seg>

测试输入： 1\*3\*1024\*2048

Ubuntu: 18.04

GPU: 1080Ti

PyTorch: 1.6.0

TensorRT: 8.0.3

CUDNN: ?

iterration: ?

耗时测试记录帧率：fps

320k

**15服务器：conda activate ll-seg**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| model | mIoU | pytorch | tensorrt | gflops | params | pytorch | tensorrt | gflops |
|  |  | 1\*3\*1024\*2048 | | |  | 1\*3\*256\*512 | | |
| ERFNet\_Gov\* | 73.75 | 15.85 | 30.23 | 111.65 | 2.01 | 88.83 | 331.21 | 6.97 |
| ERFNet\_1head\_Custom |  | 15.90 | 30.55 | 111.83 | 2.01 | 79.95 | 341.41 | 6.99 |
| ERFNet\_2head\_Custom |  | 18.58 | 35.83 | 101.95 | 1.96 | 95.55 | -- |  |
| RepSeg\_Medium(Deconv)\* | 78.50 | 7.32 | 10.10 | 587.16 | 10.78 |  |  |  |
| Res18\_PSPNet\* | 74.87 | 9.06 | 14.64 | 434.04 | 12.63 |  |  |  |
| Res50\_PSPNet\* | 78.55 | 2.31 | 2.99 | 1.42T | 46.58 |  |  |  |
| segformer\_b0 | 71.63 | 48.85  no\_ln  512\*1024 | 73.89  no\_ln  512\*1024 |  |  |  |  |  |
| segformer\_b1 | 73.96 | 35.82  no\_ln  512\*1024 | 50.16  no\_ln  512\*1024 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **train: 1024\*512, test: 1024\*2048,**  **w/o prerain,**  **w/o ohemloss,**  **w/o class\_balance,**  **w/o warmup**  **iter: 160k**  **bn: allsyncbn(eps=1e-5)**  **for fair comparison** | | | | | |  |  |  |
| model | mIoU | pytorch | tensorrt | gflops | params |  |  |  |
| RepSeg\_Small【重点】 | 75.37 | 25.69 | 41.03 | 116.68 | 2.56 | 208.50 | 465.23 | 7.29 |
| RepSeg\_Small(Deploy=0) | 75.37 | 15.17 | 25.79 |  |  |  |  |  |
| RepSeg\_Small(Deconv) | 75.67 | 18.79 | 29.88 |  |  |  |  |  |
| bisenetv1(Res18) author | 73.15 | 35.49 | 55.49 |  |  |  |  |  |
| ~~bisenetv2(?)~~ | ~~71.48~~ | ~~31.39~~ | ~~49.81~~ | ~~99.05~~ | ~~3.35~~ |  |  |  |
| stdc1(833) | 74.18 | 37.37 | 74.05 | 162.20 | 13.58 |  |  |  |
| stdc2(1446)【重点】 | 75.77 | 29.79 | 54.91 | 267.83 | 21.63 |  |  |  |
| ~~sfnet(res18)~~ | ~~75.38~~ | ~~15.96~~ | ~~x~~ | ~~243.31~~ | ~~12.86~~ |  |  |  |
| ddrnet\_23\_sim【重点】 | 73.36 | 64.14 | 111.73 | 36.30 | 5.67 |  |  |  |
| ddrnet\_23【重点】 | 75.52 | 27.32 | 41.66 | 143.10 | 20.11 |  |  |  |
| ~~ddrnet\_39~~ | 76.48 | 16.70 | 24.29 | 281.15 | 32.31 |  |  |  |
| repseg\_bisenet\_medium | 74.47 | 34.33 | 53.16 |  |  |  |  |  |
| repseg\_bisenet\_small | 72.32 | 62.28 | 103.55 |  |  |  |  |  |
| repseg\_bisenet\_small | 75.60 | ~~?~~ | 30.04 |  |  |  |  |  |
| repseg\_ddrnet\_23\_sim | 74.43 | 71.08 | 112.43 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **train: 512\*1024, test: 1024\*2048,**  **w/ prerain,**  **w/ ohemloss,**  **w/o class\_balance,**  **w/o warmup,**  **iter: 160k,**  **bn: allsyncbn(eps=1e-5)**  **for fair comparison** | | | | | |  |  |  |
| model | mIoU | pytorch | tensorrt | gflops | params |  |  |  |
| RepSeg\_Small | ? | 25.69 | 41.03 |  |  |  |  |  |
| bisenetv1(Res18) author | 75.94 | 35.49 | 55.49 |  |  |  |  |  |
| stdc1(833) | ? | 37.37 | 74.05 |  |  |  |  |  |
| stdc2(1446) | ? | 29.79 | 54.91 |  |  |  |  |  |
| ddrnet\_23\_sim | ? | 64.14 | 111.73 |  |  |  |  |  |
| ddrnet\_23 | ? | 27.32 | 41.66 |  |  |  |  |  |
| repseg\_bisenet\_medium |  | 34.33 | 53.16 |  |  |  |  |  |
| repseg\_bisenet\_small |  | 62.28 | 103.55 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **train: 1024\*1024, test: 1024\*2048,**  **w/ prerain,**  **w/ ohemloss,**  **w/o class\_balance,**  **w/o warmup**  **iter: 160k**  **bn: allsyncbn(eps=1e-5)**  **for fair comparison** | | | | | |  |  |  |
| model | mIoU | pytorch | tensorrt | gflops | params |  |  |  |
| RepSeg\_Small | 77.85 | 25.69 | 41.03 |  |  |  |  |  |
| bisenetv1(Res18) author |  | 35.49 | 55.49 |  |  |  |  |  |
| stdc1(833) |  | 37.37 | 74.05 |  |  |  |  |  |
| stdc2(1446) |  | 29.79 | 54.91 |  |  |  |  |  |
| ddrnet\_23\_sim | 76.85 | 64.14 | 111.73 |  |  |  |  |  |
| ddrnet\_23 |  | 27.32 | 41.66 |  |  |  |  |  |
| repseg\_bisenet\_medium |  | 34.33 | 53.16 |  |  |  |  |  |
| repseg\_bisenet\_small |  | 62.28 | 103.55 |  |  |  |  |  |
| repseg\_ddrnet\_23\_sim |  |  |  |  |  |  |  |  |
| **train: 1024\*1024, test: 1024\*2048,**  **w/ prerain,**  **w/ ohemloss, 0.9, 1/8**  **w/ class\_balance,**  **w/ warmup,lr0**  **iter: 160k**  **bn: allsyncbn(eps=1e-5)**  **for fair comparison** | | | | | |  |  |  |
| RepSeg\_Small（单边） | 79.30? | 25.69 | 41.03 |  |  |  |  |  |
| ddrnet\_23\_sim（双边） | 77.93 | 64.14 | 111.73 |  |  |  |  |  |
| repseg\_ddrnet\_23\_sim（双边） | 79.01? | 64.14 | 111.73 |  |  |  |  |  |
| ddrnet\_23（双边） | 79.11 | 27.32 | 41.66 |  |  |  |  |  |
| repseg\_ddrnet\_23（双边） | 80.58? | 27.32 | 41.66 |  |  |  |  |  |