

ImageNet Model-Zoo

imagenet主流模型预训练模型, 训练的图像处理库为pil, 测试部分模型同时使用了pil和opencv测试

MobileNet v1v2v3

| Model | Input | Top1 (paper) | Top1 (pil) | Top1 (opencv) | Top5 (pil) | Top5 (opencv) | Mem | Batch Size | Strategy | LR | Weight Decay | Max Iter |
|----------------------|-----------------|---------------|------------|---------------|------------|---------------|-------|------------|----------------------------|------|--------------|----------|
| MobileNet v1 0.5x | 3*224*224 (RGB) | 63.70% | 65.53% | 65.00% | 85.96% | 85.53% | 1529M | 8*32 | cosine decay | 0.12 | 0.00004 | 50w |
| MobileNet v1 1x | 3*224*224 (RGB) | 70.60% | 72.40% | — | 90.80% | — | 2383M | 8*32 | cosine decay, label smooth | 0.12 | 0.00004 | 50w |
| MobileNet v2 0.6x | 3*224*224 (RGB) | 66.70% | 67.83% | 66.73% | 87.89% | 87.24% | 2389M | 8*32 | cosine decay | 0.12 | 0.00004 | 150w |
| MobileNet v2 1x | 3*224*224 (RGB) | 71.80% | 72.80% | 71.89% | 91.10% | 90.64% | 2863M | 8*32 | cosine decay, label smooth | 0.12 | 0.00004 | 150w |
| MobileNet v2 1x ReLU | 3*224*224 (RGB) | 71.80% | 72.92% | 72.21% | 91.21% | 90.80% | 2863M | 8*32 | cosine decay, label smooth | 0.12 | 0.00004 | 150w |
| MobileNet v2 1x ReLU | 3*224*224 (RGB) | 71.80% | 73.16% | — | 91.09% | — | 2863M | 8*32 | cosine decay, label smooth | 0.12 | 0.00004 | 150w |
| MobileNet v2 1.4x | 3*224*224 (RGB) | 73.3% (74.7%) | 75.83% | 75.11% | 92.76% | 82.51% | 3877M | 8*32 | cos step, label smooth | 0.12 | 0.00004 | 150w |
| MobileNet v3 small | 3*224*224 (RGB) | 67.4% | 68.55% | | 87.66% | | | 8*32 | cos step, label smooth | 0.12 | 0.00005 | 150w |
| MobileNet v3 big | 3*224*224 (RGB) | 75.2% | 74.84% | | 92.10% | | | 8*32 | cos step, label smooth | 0.12 | 0.0001 | 150w |

MobileNet v2.x

训练策略统一为:

| Batch Size | Image Size | Strategy | LR | Weight Decay | Max Iter |
|------------|------------|--------------|------|--------------|----------|
| 8*32 | 224*224 | cosine decay | 0.12 | 0.00004 | 150w |

| Model | | Input | Top1 (pil) | Top1 (opencv) | Top5 (pil) | Top5 (opencv) | Mem | FLOPS (M) | Params (M) |
|-------|----------------------|-------|------------|---------------|------------|---------------|-------|-----------|------------|
| V2.1 | [1, 3, 4, 6] / 4 | gray | 62.53% | | 83.71% | | 1757M | 105.1 | 0.304 |
| | | RGB | 64.95% | 64.03% | 85.53% | 85.07% | 1795M | 106.9 | 0.304 |
| V2.2 | [1, 3, 4, 6, 3] / 8 | gray | 55.47% | | 78.18% | | 1209M | 30.96 | 0.22 |
| | | RGB | 59.05% | 58.68% | 81.16% | 80.94% | 1245M | 34.87 | 0.22 |
| V2.3 | [1, 2, 3, 3, 3] / 4 | gray | 63.91% | | 84.96% | | 1543M | 80.72 | 0.58 |
| | | RGB | 66.09% | 65.41% | 86.31% | 85.95% | 1581M | 82.53 | 0.58 |
| V2.4 | [1, 2, 2, 2, 3] / 4 | gray | 62.40% | | 83.73% | | 1445M | 66.52 | 0.53 |
| | | RGB | 64.48% | 63.42% | 84.97% | 84.38% | 1483M | 68.33 | 0.53 |
| V2.5 | [1, 6, 8, 12, 3] / 8 | gray | 59.64% | | 81.54% | | 1623M | 60.71 | 0.29 |
| | | RGB | 60.95% | 60.88% | 82.48% | 82.20% | 1659M | 61.61 | 0.29 |
| V2.6 | [1, 6, 8, 23, 3] / 8 | gray | 59.99% | | 81.76% | | 1827M | 80.85 | 0.4 |
| | | RGB | 63.25% | 62.92% | 84.40% | 84.05% | 1863M | 81.76 | 0.4 |
| V2.7 | [1, 4, 6, 8, 3] / 8 | gray | 58.16% | | 80.34% | | 1369M | 44.25 | 0.25 |

| | | | | | | | | | |
|--|--|-----|--------|--------|--------|--------|-------|-------|------|
| | | RGB | 59.74% | 59.45% | 81.45% | 81.24% | 1405M | 45.15 | 0.25 |
|--|--|-----|--------|--------|--------|--------|-------|-------|------|

ShuffleNet v1v2

| Model | Input | Top1 (paper) | Top1 (pil) | Top1 (opencv) | Top5 (pil) | Top5 (opencv) | Mem | Batch Size | Strategy | LR | Weight Decay | Max Iter |
|------------------|-----------------|--------------|------------|---------------|------------|---------------|-------|------------|--|------|--------------|----------|
| ShuffleNet v1 1x | 3*224*224 (RGB) | 67.40% | 68.17% | 67.16% | 87.97% | 87.44% | 1869M | 8*32 | cosine decay, label smooth | 0.12 | 0.00004 | 150w |
| ShuffleNet v1 2x | 3*224*224 (RGB) | 73.70% | 74.20% | 73.07% | 91.64% | 91.13% | - | 8*32 | cosine decay | 0.12 | 0.0001 | 150w |
| ShuffleNet v2 1x | 3*224*224 (RGB) | 69.40% | 69.90% | 69.14% | 89.06% | 88.67% | 1503M | 8*32 | cosine decay, label smooth | 0.12 | 0.00004 | 150w |
| ShuffleNet v2 2x | 3*224*224 (RGB) | 74.90% | 75.01% | 74.46% | 92.25% | 91.90% | 2097M | 8*32 | cosine decay, label smooth, color jitter | 0.15 | 0.0001 | 150w |

ResNet

| Model | Input | Top1 (pil) | Top5 (pil) | Mem | Batch Size | Strategy | LR | Weight Decay | Max Iter |
|--------------------------|-----------------|------------|------------|-----|------------|----------------------------|------|--------------|----------|
| resnet50 | 3*224*224 (RGB) | 76.65% | 93.14% | - | 8*32 | step | 0.1 | 0.0001 | 55w |
| resnet50(ceil mode True) | 3*224*224 (RGB) | 76.93% | 93.34% | - | 8*32 | step | 0.1 | 0.0001 | 55w |
| resnet101 | 3*224*224 (RGB) | | | - | 8*32 | cosine decay, label smooth | 0.12 | 0.0001 | 50w |
| resnet152 | 3*224*224 (RGB) | | | - | 8*32 | cosine decay, label smooth | 0.12 | 0.0001 | 50w |

seNet

| Model | Input | Top1 (paper) | Top1 (pil) | Top5 (paper) | Top5 (pil) | Mem | Batch Size | Strategy | LR | Weight Decay | Max Iter |
|--------------|-----------------|--------------|------------|--------------|------------|-------|------------|--|------|--------------|----------|
| se-resnet50 | 3*224*224 (RGB) | 76.71% | 77.45% | 93.38% | 93.75% | 4750M | 8*32 | step [0.1, 0.1, 0.1] | 0.12 | 0.0001 | 150w |
| se-resnet101 | 3*224*224 (RGB) | 77.62% | 78.36% | 93.93% | 94.14% | 6843M | 8*32 | cosine decay | 0.12 | 0.0001 | 150w |
| se-resnet50 | 3*224*224 (RGB) | 78.90% | 79.04% | 94.51% | 94.58% | - | 8*32 | cosine decay, label smooth | 0.12 | 0.0001 | 50w |
| se-resnet101 | 3*224*224 (RGB) | 79.30% | 79.38% | 94.99% | 94.81% | - | 8*32 | cosine decay, label smooth, color jitter | 0.15 | 0.0001 | 50w |

所有的预训练模型可以在16/36/38集群的/mnt/lustre/share/yangmingmin/ImageNet-Model-Zoo下获取