Cifar-10

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Architecture | Acc/% | Params/M | Search Cost/gpu\*days | Search Method |
| ResNet18 + cutout | 96.01 ± 0.13 |  | - | - |
| DenseNet + Cutout | 97.44 | 26.2 | - | - |
| Enas macro(post) | 96.13 | 38 | 0.32 | Rl |
| Enas macro (post\_arc+retrain) | 95.92 | 42 | - | Rl |
| Enas macro (research+retrain) | 采出pooling |  |  | Rl |
| Enas micro (post) | 97.11 | 4.6 | 0.45 | Rl |
| Enas micro (post\_arc+retrain) | 96.35 | 3.9 | - | Rl |
| Enas micro (research+retrain) | 96.15 | 4.3 | 0.33 | Rl |
| Darts (post) | 97.24±0.09 | 3.3 | 4 | gradient-based |
| Darts (retrain by post arc) | 97.16 | 3.35 | - | gradient-based |
| Darts (retrain by research arc) | 97.23 | 3.36 | 1.06 | gradient-based |
| Ours | 96.56 | -1 | 25 | Evolution |
| Enas by cifar100 |  |  |  | Rl |
| Darts by cifar100 |  |  |  | gradient-based |
| Ours by cifar100 |  |  |  | Evolution |
| Enas by tiny-imagenet |  |  |  | Rl |
| Darts by tiny-imagenet |  |  |  | gradient-based |
| Ours by tiny-imagenet |  |  |  | Evolution |

Cifar-100

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Architecture | Acc/% | Params/M | Search Cost/gpu\*days | Search Method |
| ResNet18 + cutout | 78.04±0.24 |  | - | - |
| Densenet + CutOut | 82.82 | 25.6 | - | - |
| Enas micro | 81.26 | 3.1 | 0.33 | gradient-based |
| Darts | 81.60 | 2.5 | 4.2 | gradient-based |
| (after denoise)Ours | 74.20 | -1 | 24 | Evolution |
| Enas by cifar10 | 81.28 (direct\_final\_macro) | 21.3 | 0.32 | Rl |
| Darts by cifar10 (post arc) | 83.12 | 3.4 | - |  |
| Darts by cifar10 (research arc) | 82.78 | 3.42 | 1.06 | gradient-based |
| Ours by cifar10 | 68.00 |  | 25 | Evolution |
| Enas by tiny-imagenet |  |  |  | Rl |
| Darts by tiny-imagenet |  |  |  | gradient-based |
| Ours by tiny-imagenet |  |  |  | Evolution |
|  |  |  |  |  |

Tiny-imagenet

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Architecture | Val Acc/% | Params/M | Search Cost/gpu\*days | Search Method |
| Resnet |  |  | - | - |
| Densenet | 62.73 |  | - | - |
| Enas |  |  |  | Rl |
| Darts (retrain by post arc) | max69.00（last57.00）（retrain by existed arc） | 2.36 | - | gradient-based |
| Darts |  |  |  | gradient-based |
| Ours | 63.43 | 64 | 2.6 | Evolution |
| Enas by cifar10 |  |  |  | Rl |
| Darts by cifar10 |  |  |  | gradient-based |
| Ours by cifar10 |  |  |  | Evolution |
| Enas by cifar100 |  |  |  | Rl |
| Darts by cifar100 |  |  |  | gradient-based |
| Ours by cifar100 |  |  |  | Evolution |

Imagenet

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Architecture | Acc/% | Params/M | Search Cost/gpu\*days | Search Method |
| Resnet |  |  | - | - |
| Densenet |  |  | - | - |
| Enas by cifar10 |  |  |  | Rl |
| Darts by cifar10 |  |  |  | gradient-based |
| Ours by cifar10 |  |  |  | Evolution |
| Enas by cifar100 |  |  |  | Rl |
| Darts by cifar100 |  |  |  | gradient-based |
| Ours by cifar100 |  |  |  | Evolution |
| Enas by tiny-imagenet |  |  |  | Rl |
| Darts by tiny-imagenet |  |  |  | gradient-based |
| Ours by tiny-imagenet |  |  |  | Evolution |

\*\*first\*\*\*Uwaterloo denoise

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Architecture |  | Psnr/dB | Params/M | Search Cost/gpu\*days | Search Method |
| \*\*\*（人工的denoise）《对比的》 |  |  |  | - | - |
|  |  |  |  | - | - |
| \*\*first\*\*\*---Enas ？ |  |  |  |  | Rl |
| \*\*first\*\*\*----Darts ？ |  |  |  |  | gradient-based |
| \*\*\*Ours |  | 29.38 |  | 1.7 | Evolution |
| Enas by cifar10 |  |  |  |  | Rl |
| Darts by cifar10 |  |  |  |  | gradient-based |
| Ours by cifar10 |  |  |  |  | Evolution |
| Enas by cifar100 |  |  |  |  | Rl |
| Darts by cifar100 |  |  |  |  | gradient-based |
| Ours by cifar100 |  |  |  |  | Evolution |
| Enas by tiny-imagenet |  |  |  |  | Rl |
| Darts by tiny-imagenet |  |  |  |  | gradient-based |
| Ours by tiny-imagenet |  |  |  |  | Evolution |